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Vol. CLXXII No. 2253 WITH WHICH IS INCORPORATED THE GRAPHIC MARCH 27 1943

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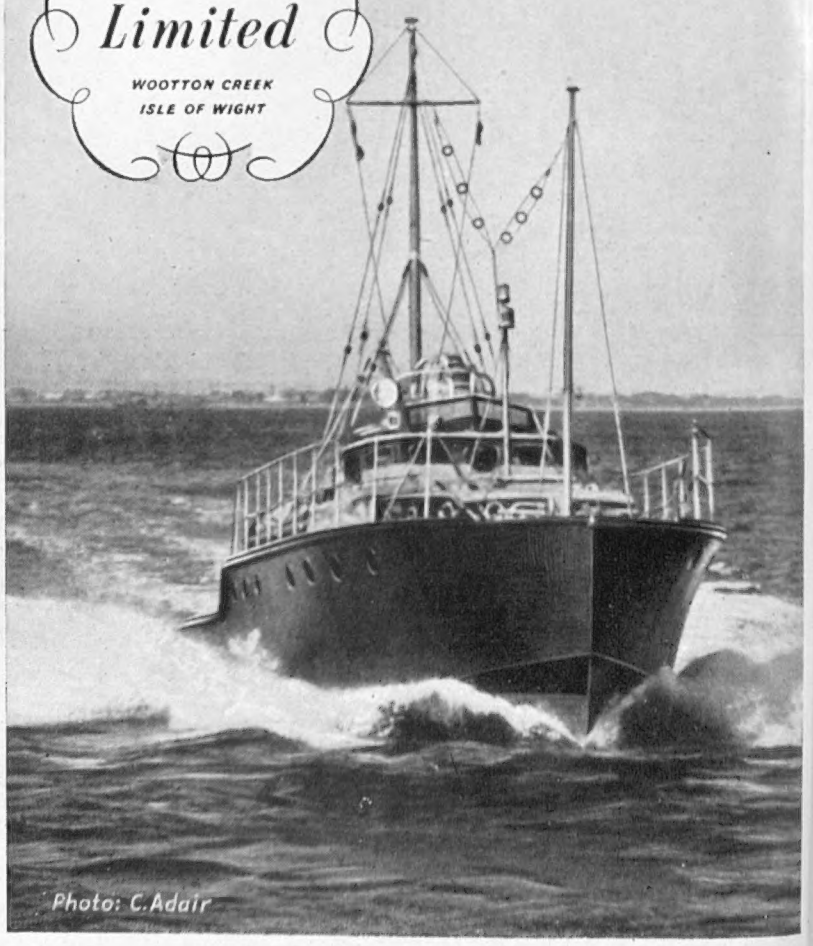
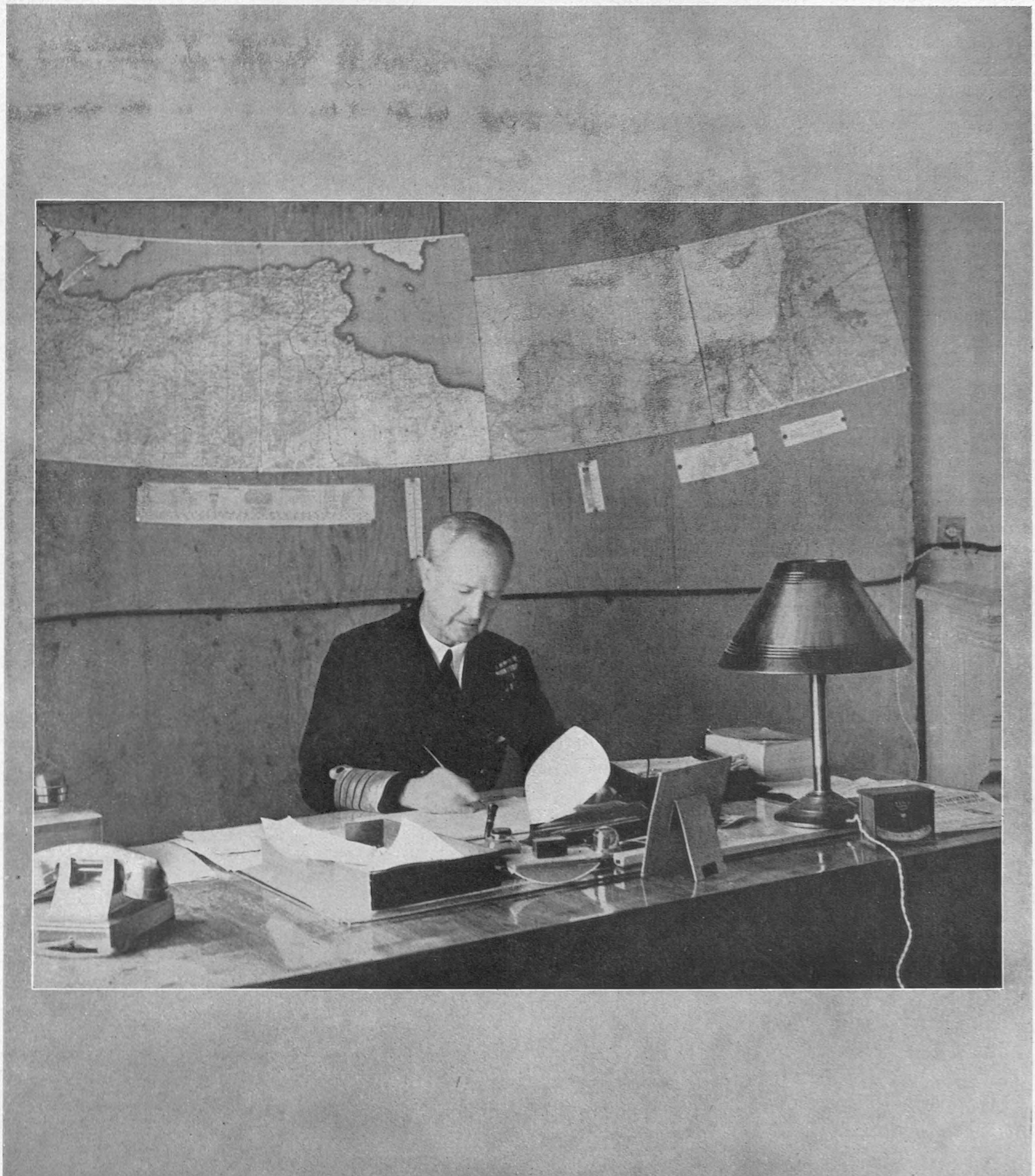


Photo: C. Adair

Volume CLXXII No. 2253 The SPHERE, London, March 27, 1943

THE SPHERE
With which is incorporated "THE GRAPHIC"
The Empire's Illustrated Weekly



THE MAN WHO COMMANDS THE ALLIED FLEET IN THE NORTH AFRICA BATTLE ZONE: A CLOSE-UP OF ADMIRAL OF THE FLEET SIR ANDREW CUNNINGHAM in his office at Headquarters, where most of his time is now spent

When the history of the present war comes to be written, the name of Sir Andrew Cunningham will always be associated with the Mediterranean Sea, and with British domination of those waters. Since the year 1939, he has been the "Hammer of the Italians"—the man who kept the Inland Sea open to British shipping and to British war vessels. Up till last year, the Admiral had his Headquarters at Alexandria: then came his translation to Washington, as Head of the British Admiralty Delegation. But as soon as the Allied landings took place in North Africa, Admiral Cunningham (now promoted to the very highest rank in the Navy—that of Admiral of the Fleet) was back in the Mediterranean, once again as Commander-in-Chief; but this time with his Headquarters at the other end of the Sea. Here he now spends most of his time, in the office seen above, planning strategy and tactics against the Axis. Note the map behind his working desk, which covers only a part of the area for which the Admiral is responsible. At sixty years of age, Admiral of the Fleet Sir Andrew Browne Cunningham bears a great weight on his very capable shoulders

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A WAR NEWSLETTER —No. 186

1, NEW OXFORD STREET, W.C.1.

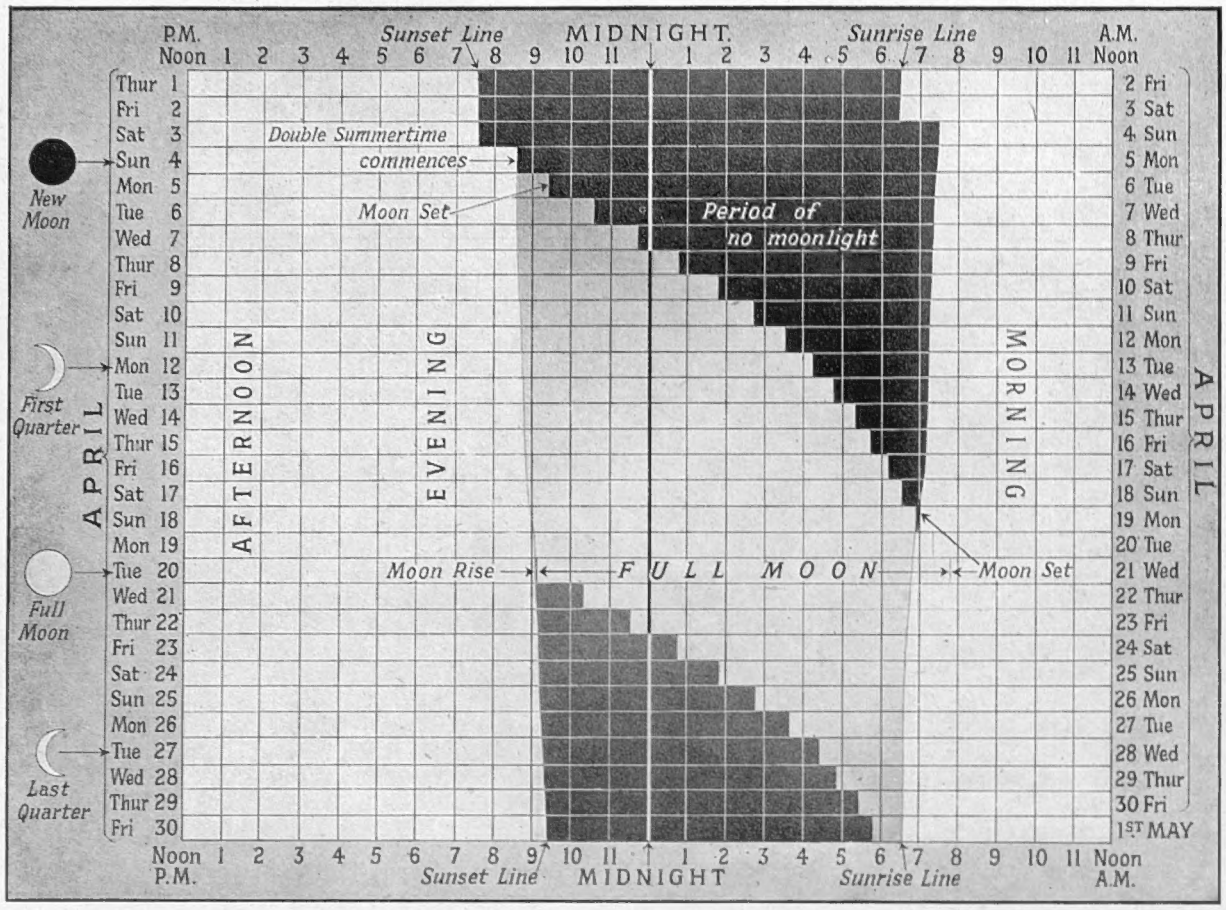
March 21 — A Quarter-Century Anniversary. — Mr. Churchill, historian and statesman, chose March 21 for his seasonal broadcast to the nation. When I first learned of his choice of date, I wondered whether he would remember that this day was the twenty-fifth anniversary of the Germans' last bid for victory (to be snatched from the defeat already staring them in the face) in the war of 1914-18. It was a notable bid. The Germans broke through the Somme defences and we ran before them to the suburbs of Amiens, very quickly and in some disorder. It was nip and tuck, when Carey's force of clerks and tallymen and strayed stragglers were assembling for a back-to-the-wall last stand in the sector where I found myself. It is safe to say that not one Englishman in ten thousand had any idea that day how near the conquering Germans were to defeat. It struck me on March 21, 1943, as odd that one Englishman in two perhaps to-day is quite confident that Germany's number is up and victory assured sooner or later. Indeed, I probably underrate the confidence of all the Allies. We may fret with impatience at the lulls and the setbacks, but we are all busy—and advised to be busy—re-settling the world after the "unconditional surrender" armistice to be. Wherein is this confidence of 1943? Why was there no visible hint of it in 1918? On March 21, 1943, the Germans had won back Kharkov and were assailing the Russians on the Donetz. The narrows of the Mediterranean were strongly held by the Nazis, and there was no immediate prospect of intervention in aid of Russia on the underbelly or elsewhere in Europe. And the plight of our shipping had reached a new nadir. And in the Far East, the power of Japan was still not half-scotched, let alone killed. Yet we were certain of victory, and had been so since the occupation of Algeria and Libya. The fog of war is not more patchy than in 1918. Indeed, it is denser, for the dust of propaganda (all lies) intensifies the curtain, and indeed we are warned to place no reliance on news out of Germany and Axis-land. Is our confidence to-day based on numbers and statistics, on the certainty that right must triumph, on the lessons of history . . .? If based on scientific data, why were those data not available in 1918? Russia was down and out in 1918, America was only beginning to make her weight felt in the field. Yet on the point of manpower, the enemy to-day is better and not worse situated, and the U-boat weapon is not to-day, as then, blunted in her hand. These reflections I wrote down and deliberately posted before I heard Mr. Churchill's broadcast. I thought it would interest me to read it *post facto* and to see how far the broadcast clarified or contradicted these thoughts of mine.

The Churchill Broadcast. — The twenty-fifth anniversary of March 21, 1918, proved a notable date for the second World War. On that date Hitler and Churchill addressed their peoples in broadcast and Montgomery began his assault on Mareth. Both speeches caught me bending. I am not readily swayed by rumours of Hitler's death, illness or mental breakdown, but after hearing the broadcast record I came round to the rumour-mongers. Something clearly *is* wrong with the man. Dummy or drugged, the fire has gone out of the man who read the script. Mr. Churchill's once doughty opponent gave him a fine parliamentary advantage—the right of final reply. He did not take up the opportunity. How wise! But if he did not clarify all my bewilderment, he was clear enough about the ineptitude of dotting the "i's" of post-war reconstruction, when the "t" of Victory in war is not yet crossed or formed. And having protested at this foolishness, he devoted all his speech except twelve words to that very subject. He was right as usual. He threw the clearest, purest cold water on wishful thinking, on Utopias innocent of practical possibilities, on nostalgia for peace when there is nothing for it but war, on the present fanaticism for Utopia which has seized Britain. He brought to bear on the hysteria of Utopia-making all that is sanest, most generous, most honest, and most practical in his experience of forty years of public life largely devoted to measures designed for social betterment, the levelling of class barriers and the raising of standards of life for all classes. He showed how these aims had been furthered, and how they could be furthered still more in the future. He was courageous enough to catalogue the obstacles and to rescue from the scrap-heap those treasures of our greatness which fanaticism rejects. Individual enterprise must be retained as the basis of the new world, and what is best in the tradition of the old must redress the balance of the new world. Meanwhile, there is Nazism to be put in the bag. . . .

Kharkov.—This once prosperous city and populous centre has changed hands again, and I suppose a broken honeycomb of crazy ruins, hiding a few hundred bemused and starving citizens, is all that remains of its municipal grandeur and usefulness. The Russians regained it just under a month ago. Now the Germans are back there . . . before all their nasty, Nazi placards had been torn down. It is not pleasant to think of those civilians of Kharkov who may hopefully have returned to the ruins in the wake of the triumphant Russians. Their experience of war and reflections on its cruelty must reach the highest point of mental suffering and bitterness. Impersonally considered (if that be possible), Kharkov is a square on the chessboard of the vast and fearful battleground of humanity. With the "philosophy of old campaigners," the accredited reporters and commentators on either side exaggerate and belittle its strategic importance, according as they hold it or lose it. Just in the same way, the losing side in any sector has all the bad luck in the weather and all the odds against it in numbers and weight of material. All that is understandable and natural. The recapture of Kharkov is an undoubted blow to Russian hopes in the Ukraine and the Don Basin. But the triumphs of the great Russian winter offensive—we do well to remember—outlasted our wildest dreams. The song of triumph was sung too soon and by too many distant choirs. We in England, in our easy way, were surrendering again to wishful thinking and lightly assuming that the Nazis had lost their power to hit back. Kharkov is a warning to us, as it is a heavy disappointment to our ally. Hitler has still an inestimable number of dangerous shots in his locker, and he will hand them out one by one, or two by two. The Allies are still in the densest and darkest of the wood, and the time for hallooing is far distant. I myself never cease to cry out against the folly of boast and brag and glorification and, above all, for the reason that these premature fireworks dazzle our eyes, which should never be so alert and watchful as now, when our resourceful enemies are at their most dangerous, being awakened to their own danger. That said, the ding-dong of Kharkov can be calmly and usefully assessed and considered. War is destruction and attrition. There is no end in victory except by the painful and slow process of destroying the Nazis' power to make war, by killing his soldiers and wasting his material in guns, oil, tanks, U-boats. If to that only end Kharkov is a more important hinge than Smolensk or Rhjev, then the loss of Kharkov means more than . . . the loss of Kharkov—as Kharkov. We in England are not in the confidence of Stalin. We are in no position to know what his broadest strategy envisaged, nor indeed how much or how little he expected this possibility. What we do know is that the Nazis are nowhere near cracking, and that Stalin's opinion that it is *up to us now* can have undergone no modification by the fall of Kharkov. But cities as cities must be freely won and lost, ground must be advanced over and retreated over, time and again, before Hitler's reserves admit final attrition. The loss of Kharkov should once again outlaw the folly of wishful thinking and bring all the Allies back to the brass tacks of silence and action, resolve and realism.

Our Bread and Circuses. —In the Roman Empire's decline from greatness, Rome's luxurious, polyglot population demanded bread and circuses, and got them for quiet's sake. We are not yet in decline; we are again on the upgrade as an imperial Power. But we cry for and receive for quiet's sake democracy's substitute for the bread and circuses of old Rome. The whole foundation of modern democracy is built on words, and it takes a war of this magnitude and gravity to reveal the rockiness of such foundations. The public must be fed and amused and flattered into the belief that it plays its designed part in government, and even in strategy. Press conferences, war reviews, Parliamentary debates on confidential subjects, rose-coloured appreciations of damage done and business done, claret-coloured promises of damage and business in hand—all these are the circuses of democracy. Nothing can alter the fashion of reliance on words among democratic peoples or their rulers. The rulers hold their places solely on a guarantee that they will spill all the words that can possibly be spilt. New inventions must be "released" with the narrowest margins of safety. The Service estimates can only be made plausible by an expenditure of promises and boasts, and a campaign of showmanship staged by expert pageant-masters. No opportunity for a flight of rhetoric must be missed and no politician, however obscure, but must regard public pronouncements as his *métier* and bare duty and his proof of efficiency. Yet, at the end of it all, the public, drowned in the spate of words, is perfectly aware of its own continued ignorance, knows that it is a game of make-believe, an empty façade of democracy. Without any real doubt that the spate is mostly froth and bubble, it suffers itself to be drowned in the tide of talk, and grows heady and hopeful and hilarious from the champagne of phrase-making. The morning after come punctually headaches and disillusionment.

THE OLD STAGER



"THE SPHERE" MOONLIGHT CHART FOR THE MONTH OF APRIL

The reintroduction of Double Summer Time on the night of Sunday, the 4th, comes at a particularly fortuitous period of the month, giving us a longer evening and a shorter period of total darkness before midnight. The waxing moon reaches its first-quarter phase on the night of Monday, the 12th. The full moon will be visible on the night of Tuesday, the 20th, when it rises a few minutes after sunset and does not set till an hour after sunrise. Exactly a week later the last-quarter stage will have been reached.

A limited number of these charts will be supplied free of charge on application to the Publisher, "The Sphere," Commonwealth House, 1, New Oxford Street, W.C.1, but 2½d. in stamps must be enclosed with the application

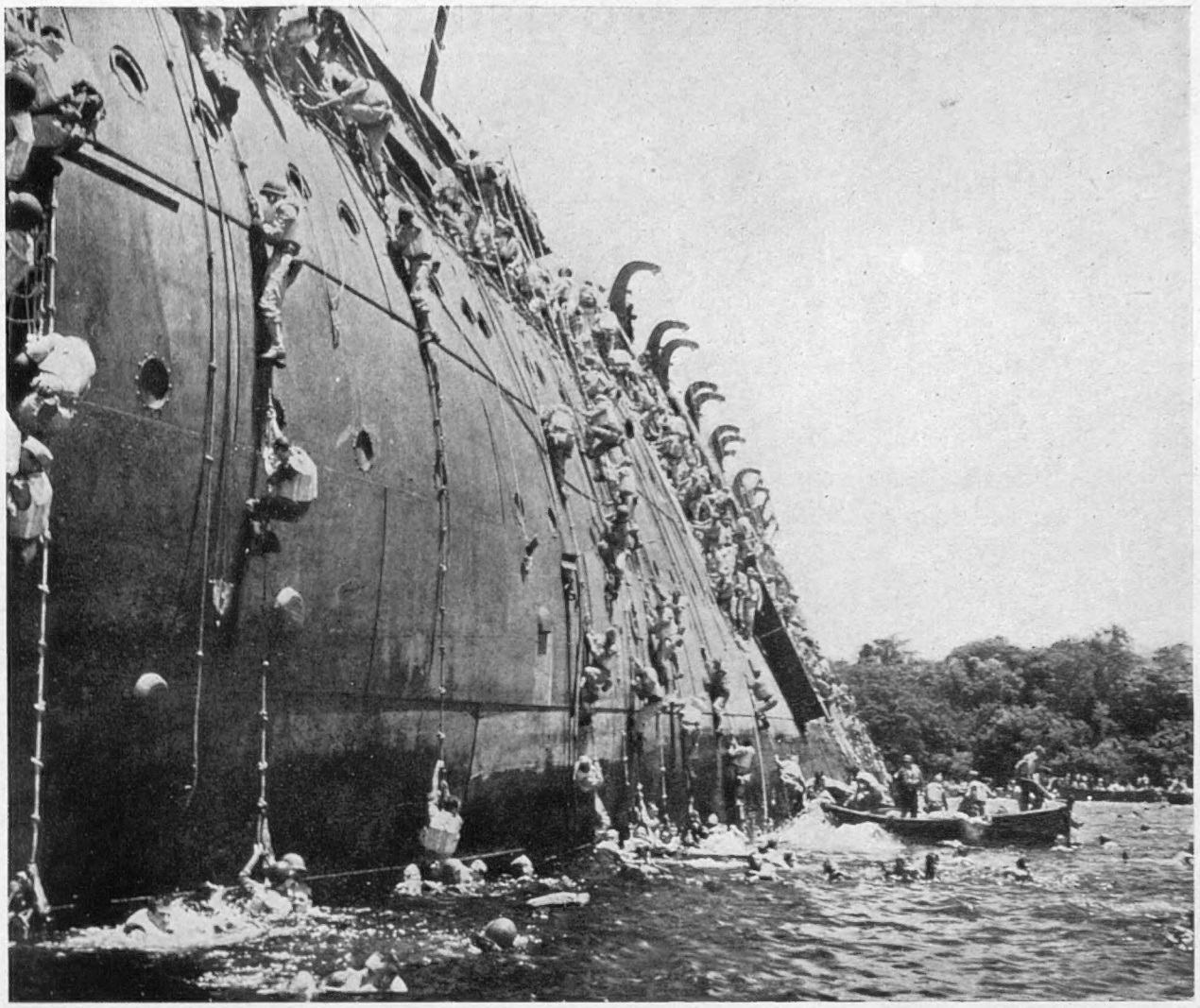
The TRAGEDY of the "PRESIDENT COOLIDGE"

Which struck a mine in the South Pacific whilst acting as a U.S. troopship

The *President Coolidge* before the war was one of the world's luxury liners. After the entry of the U.S., this 22,000-ton vessel became a troop transport; as such she was engaged on operations in the South Pacific, when she struck a mine off a small island at a moment when she was conveying 4,000 U.S. soldiers. Her loss was announced by the U.S. Navy Department on December 12, but it was not until a few days ago that the pictures reproduced here were released for publication.

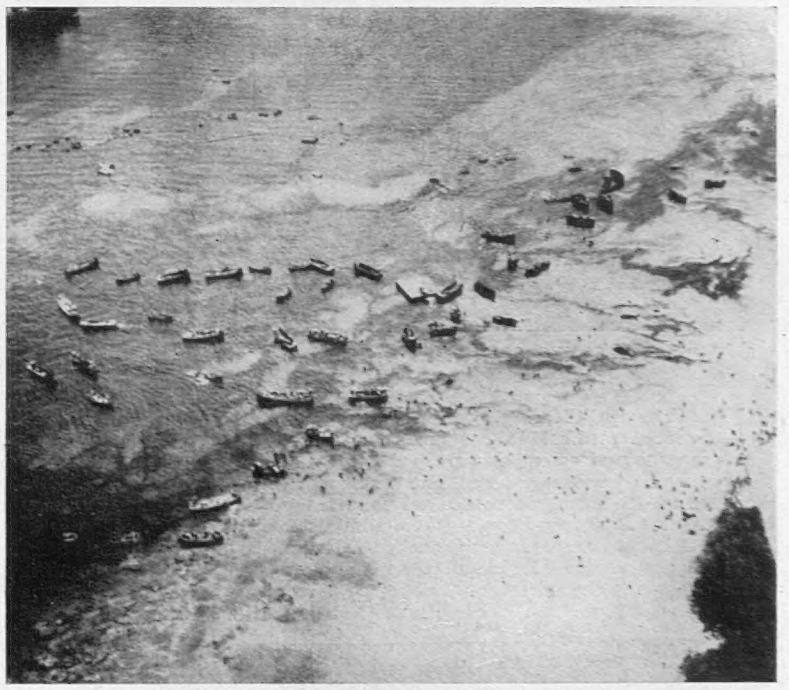
As soon as the vessel struck the mine, Captain Henry Nelson headed her for a coral reef. He rammed the reef, and the bow of the *Coolidge* drove up on to it, and stayed there sufficiently long for all but four of the men aboard to reach safety. But the vessel's bottom had been torn open and water poured into the stern. In about an hour, this had become so heavy that the bow was pulled off the reef: a few minutes later the ship had turned over on her side; she then turned turtle and sank stern first.

Perfect order prevailed throughout, and it was because of the instant response to the commander's orders that what might have become a catastrophe of the first magnitude proved to be a triumph of discipline.



THE DRAMATIC MOMENT AS THE TROOPSHIP WAS SINKING—but within reach of the land where she had been beached by her commander. The 22,000-ton, former luxury liner struck a mine off a small island: as soon as she was beached, the 4,000 men aboard swarmed down her sides and got off safely: there were only four casualties, but the vessel was, of course, a total loss

WITH HER BOW CANTED HIGH IN THE AIR after the "President Coolidge" had sunk. Rescue boats are pulling away from the troopship and landing the 4,000 soldiers safely on the small Pacific island



AFTER THE SINKING the sea is filled with landing boats, rafts, swimming men and debris, after the former luxury liner had rolled over on her side from the reef where she had been beached

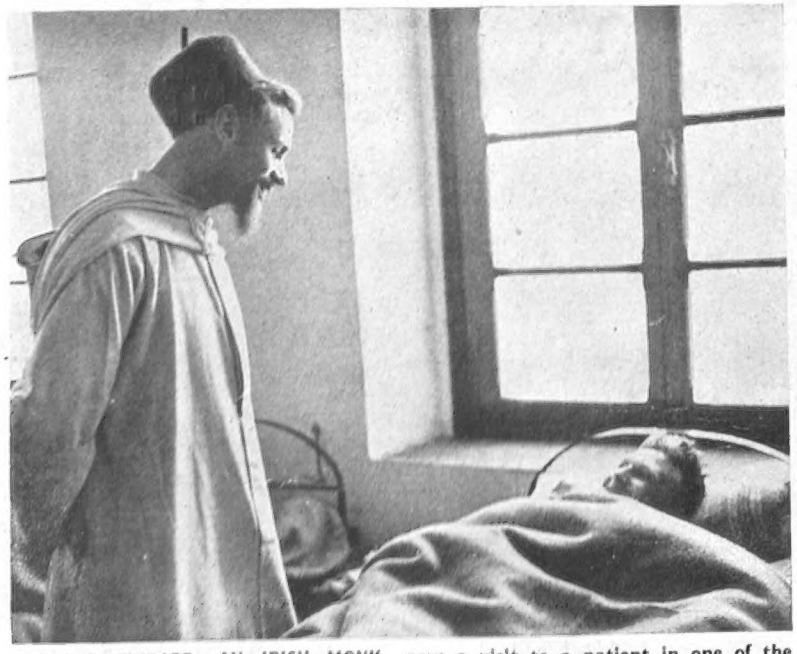
HER DECKS EMPTY OF MEN, her lifeboat davits empty of boats, a wisp of smoke curling from a funnel and with her flag still flying, the 22,000-ton troop transport slides under the waters of a South Pacific island harbour. She was driven up on a reef by her captain and was held there long enough for all but four men to escape before sliding to the bottom

NEW PICTURES FROM THE BATTLE FRONTS IN TUNISIA

A CASUALTY CLEARING STATION IN A NORTH AFRICAN BATTLE AREA : One of the indoor wards where patients fresh from the line receive treatment before going on to the Base. The figure in the cassock is Father Finbarr, an Irish monk in Tunisia

The Casualty Clearing Station is the most advanced medical post where an operation can be properly performed, though in exceptional cases one may be performed at a Main Dressing Station farther up the line. Casualties are collected by the Regimental Stretcher-Bearers, who administer first aid in the field : they are then taken to the Regimental Aid Post, where the Medical Officer treats light cases and evacuates the others by ambulance to the Advanced Dressing Station. From here they go to the Main Dressing Station, and—if they are likely to remain casualties for more than a day—they are then sent on to the Casualty Clearing Station. For cases of extreme urgency there are special surgical units, consisting of two officers and nine men, which operate independently in the battle zone.

There is one Casualty Clearing Station to a Division. The unit is completely mobile, carrying tentage for operating theatres and wards. Part of the equipment is a mobile electrical unit which supplies lighting for tents and power for the X-ray apparatus. One Casualty Clearing Station unit can treat 200 casualties at once. Expert surgeons and doctors, including many eminent medical men, are employed. Many cases are cured and returned to their units very quickly. Most receive treatment and, if they are likely to be more than seven days in recovering, are evacuated to a general hospital to make room for further battle casualties. No infectious diseases can be treated at a Casualty Clearing Station.



BROTHER FINBARR, AN IRISH MONK, pays a visit to a patient in one of the C.C.S. wards. He wears a cassock, with a Moorish fez !

AFTER TREATMENT AT THE CASUALTY CLEARING STATION some of the patients then go on to the Base. Here a number of Nursing Sisters attend to the men : one of them is seen here dressing a head wound and enjoying a joke with the patient. The nurse in the background is wearing battle-dress uniform

FROM CAN TO MOUTH : Life with a U.S. squadron up in the front line. Breakfast for these pilots in an old farmhouse near the line is a matter of eating right from the can : nor are knives or forks provided ! Note the stove chimney made out of empty pork cans

THE GENERAL DONS TIN HAT. This unusual picture of General Eisenhower was taken after his arrival at an advanced H.Q., where he changed into warmer clothes, of the type worn by ordinary U.S. enlisted men, before proceeding farther

THE R.A.F. RETURN FROM TUNIS : Pilots and crews of British light bombers reporting to the Intelligence Officer after a night raid on Tunis. The heaviness of the flying equipment gives an indication of the cold which can be experienced even in North Africa during the winter months !

MULETEERS HELP THE R.A.S.C. IN NORTH AFRICA. One Pack Company has recruited a number of Arabs to assist them. The mules attached to this unit were acquired locally by the Government ; the Arabs are employed because of their expert knowledge of the animals. Above, a mule is being laden with two heavy bales of straw—to test its temper and suitability for the work

A GOOD AFTERNOON'S WORK : A Canadian pilot who shot down two F.W.190's. This flying officer met a German in a head-on attack : both dived, but the Spitfire dived a little faster. The German's propeller struck the Spitfire's rudder, shedding a blade. It then spun to the ground. This was the Canadian's second score of the afternoon, for earlier in the same sortie he had shot down another F.W.190

AN ARAB STRIKES A BARGAIN AT A FORWARD AIRFIELD. This picture was taken at a spot where conditions are very simple—but tough. Everyone lives under canvas ; everyone eats on the move, helping himself as and when he wishes from a container carried from mess tent to airfield. The variations in diet are provided by the local Arabs, who visit the airfield with eggs, dates and other luxuries. The sergeant above has appointed himself purchasing agent for the Mess : he is here bargaining for some eggs. He flies with a Spitfire squadron

RUSES THAT SHAPE BATTLES

Some of the Tricks in This, and the Last, War which Have Fooled the Enemy High Command

Described by FERDINAND TUOHY

THERE was a refreshing whiff about Admiral Cunningham's tale of how he chose as golf partner on the eve of Matapan the Japanese Naval Attaché in the Middle East—" the blunt edge of the Axis." One can almost read the flash that must have been sent to Rome. Enemy Intelligence is almost always on to signs of some sort when big action impends. What is it to think when the opposing commander is irrefutably signalled to be relaxing hundreds of miles from the expected scene of combat ? At least it must think again.

One has the firm impression that when the " now-it-can-be-told " stage is ushered in, ruses big and small will be found to have studded operations in the Middle East ; which would be only as it should be, considering the astute " cooking " handed down by Allenby, and the illusionist's virtuosity of that master of ruse, Lawrence. Twice Allenby laid the foundation of victory by minutely concocted ruse —at Beersheba in 1917 and at Joppa the following year. In each case the enemy had to be convinced that a smash-through formation was not—where it was. In the Beersheba instance, part of the deception took the form of Allenby going back to Cairo on the eve of attack and being seen there. Cunningham's driving and putting were an embellishment twenty-four years later.

Major ruse before a fixed battle is made up of divers compounds. It is a highly complicated procedure full of technicalities, and, as it may turn rudely against oneself, protective measures are imperative against a rebound from one's own brilliance.

There should be an arresting story to tell of how Wavell managed to hoodwink Graziani in 1940. With 30,000 men, Wavell faced an enemy six or seven times stronger. By " being seen " all over the desert, by transmitting wireless messages fashioned to deceive, by inflating artillery fire, by night movement only, and by becoming part of the scrub by day, Wavell first fooled Graziani and then rushed him off his feet.

The Alexander-Montgomery twosome has twice pulled off something along the same lines. Before Alamein, or the Battle of Egypt, they contrived to keep a smash-through armoured formation in hiding within ten miles of the battlefield, and every trick and care repaid a thousandfold. Rommel was again outwitted in the Mareth Line when he attacked a position which, he had evidence the night before, was weakly held. But " at very short notice one of the most famous divisions in the Eighth Army was moved into position entirely under cover of a moonless night," with the sequel that " even troops already in the vicinity were surprised to find their comrades of many former Western Desert battles beside them at reveille." That bit of foxing led to Rommel collecting another " bloody nose."

Will there be a repetition of Dardanelles " rusing " when the time comes for the Axis to draw out of the Tunis tip ? One December morning of 1915 the Turks observed the customary signs of life in the British positions on the tip of Gallipoli. Smoke from cookers, isolated sniping, mortar fire, observation balloons. But those positions were empty save for a gallant handful circulating in order to simulate the customary signs of life. The last of the Dardanelles Expedition had left in the night, with, I believe, a single casualty.

The Germans scored up the same street when they withdrew from the Somme to the Hindenburg Line in March 1917. They, too, left " the customary signs " in the front trench system, and five vital days elapsed before we became fully aware of what had happened. Direction-finders then showed German front-line battalions to be wirelessing many miles behind where they had last been located.

However awakened in the matter commanders in this war may be, and whatever the checks imposed, wireless ruses can still bear prime fruit. Take the Allied general who, during the hopeless confusion in Flanders in May 1940, transmitted in clear the entire disposition of his troops. The Germans decided that it was a hoax, that no commander in his senses would do such a thing, and drew deductions accordingly. But it was the truth. The code, or the coders, had been mislaid in the muddle, and the decision was taken to send in clear in the rather desperate hope that the enemy would react as he did.

The advent of broadcasting opened new avenues for the wireless ruse, which Goebbels lost no time in turning to military account, acting in concert with the High Command. We all remember his " propaganda wagons " which entered Czechoslovakia and Poland abreast of the leading armoured units, and promptly emitted a barrage of claims in order to cut short local opposition. " Everything lost—no use in going on fighting " was the tenor. The same thing happened in Holland when Nazi trainees, imitating the familiar voices of the Dutch Belfrages and Alvar Lidells, gave orders that aided the campaign in Holland to its lightning close.

Future campaigning should produce more in this line. The Russians have been employing battlefield loud-speakers for a long time, chiefly for the purpose of stimulating surrender, though assuredly not without an eye to the ruse. They make a point of telling German troops from, say, Dusseldorf, of the latest R.A.F. pounding of that city ; which reminds that this sort of thing was first done as long ago as 1917, when the Germans dropped leaflets on a Turin corps at Caporetto, giving the names of Turin civilians—" your families "—shot in Turin rioting. That " softened " those Turin troops for the blow about to fall.

But are Japanese of the texture to respond to front-line radio ? They are getting it through British loud-speakers, so war correspondents report :

" Well," said the announcer, " you have again had a taste of our artillery. You have again felt the weight of our Air Force. Where is your artillery ? Where is your air force ? " The programme continued, we are told, with a straight news bulletin giving a survey of all the war fronts.

Well, at least no risk is run. But there may be just the slightest cause for uneasiness, sometimes.

In the invasion of Europe the Germans will be up to everything. They may even dress up their vassals in German uniform in order to lead the Allies to believe that tough German opposition lies ahead instead of poor-quality satellites. Though I was never able to confirm it, there used to be a story that men of one of Lord Cavan's divisions wore Italian cloaks and caps in the trenches opposite the Austrians before the final crossing of the Piave, and that this ruse lulled the Austrians, who would have taken stronger defence measures had they identified the arrival in the line of the British.

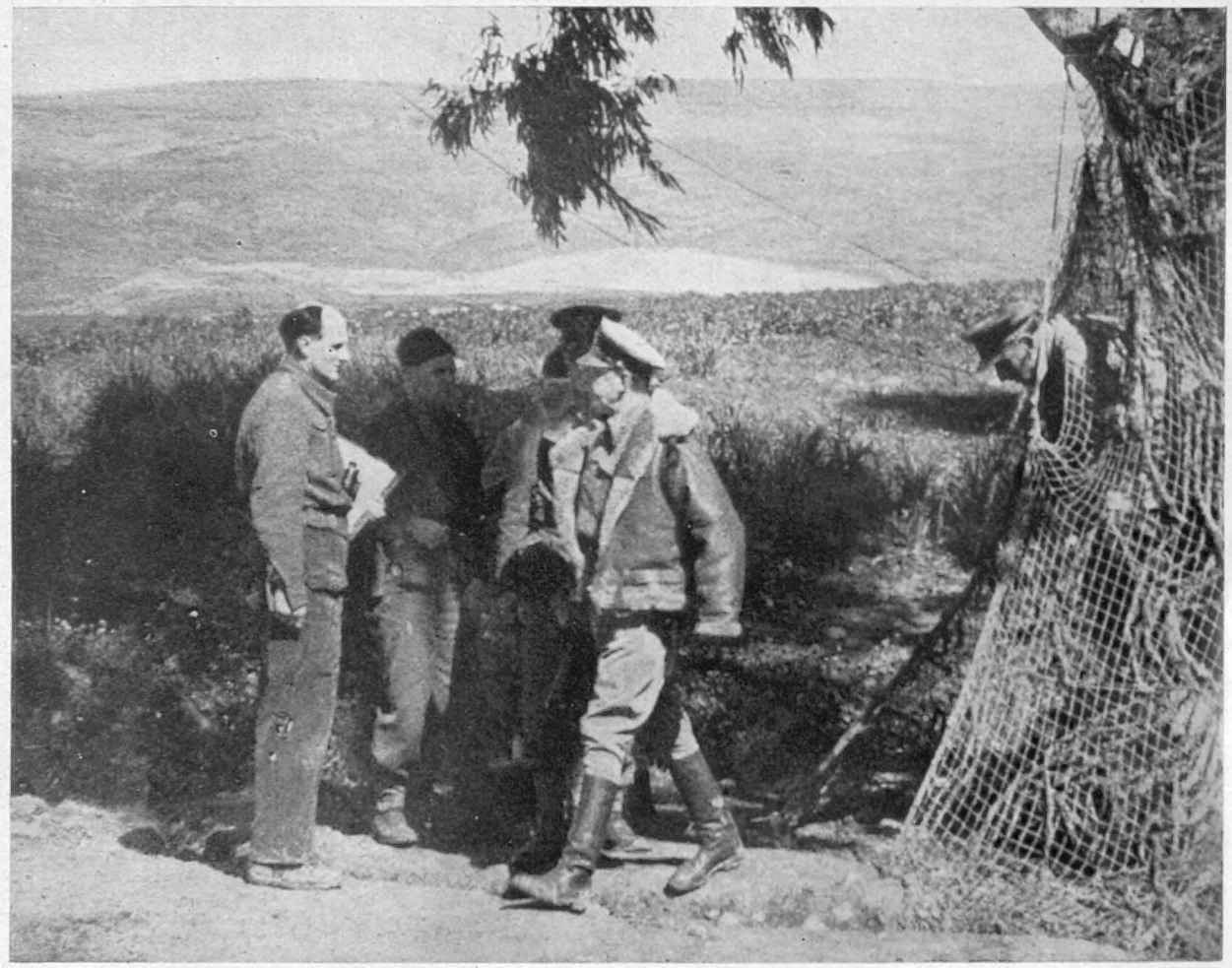
So far, certain time-honoured ruses, such as the putting of " cooked " documentation into an enemy's hands, and employment of the " talking " deserter, have probably been confined to the Eastern Front. One very much hopes the Russians are dead certain of all the identifications of hostile divisions that they announce ; but the Germans have been known to go to extremely involved lengths in order to make the opposition " Intelligence " locate as present regiments and even whole divisions that are nowhere near the line of battle.

One way is to leave corpses about, with carefully " cooked " papers in the pockets, accompanied by letters of the most intimate kind. Or they have used a spirited, carefully-primed man who sees that he is taken prisoner, and then " spills the beans," all according to German plan. These beans will, of course, not be swallowed neat. But other things by way of confirming them have a habit of transpiring.

Yes, it is a moment of history when one must keep one's wits about one.

The Germans are hard put to it to find adequate troops for all directions, so that this is the obvious time for them to go in for faking.

I, for one, am inclined to place credence in Senator Maroselli's report that " German troops are being moved like a stage army to and fro across France to give a false impression of numbers." I don't suggest a lot of troops are involved, but some almost certainly are.



GENERAL SIR HAROLD ALEXANDER, in command of the Field Armies in Tunisia, visits an Advanced Brigade Headquarters which is only four miles from the actual front. The General drove his own " jeep " car ; he wore a flying jacket above his battle tunic, and field boots based on those of the Red Army

Foch was getting keen, towards the end, on " putting up the dust," that is to say, on moving quantities of transport from place to place with the sole object of getting German air observers to report Allied troops on the move between points A and B. This is especially useful when a general intends giving a punch here and a punch there, as Foch was doing.

Any faking of German troop movement that may be going on at present in France (and not only there) is designed, I imagine, with a view to confusing French eye-witnesses, some of whom will pass out inaccurate information to the Allies, particularly to Russia ; and, secondly, to cow the French who, looking about them, decide that to revolt would be hopeless.

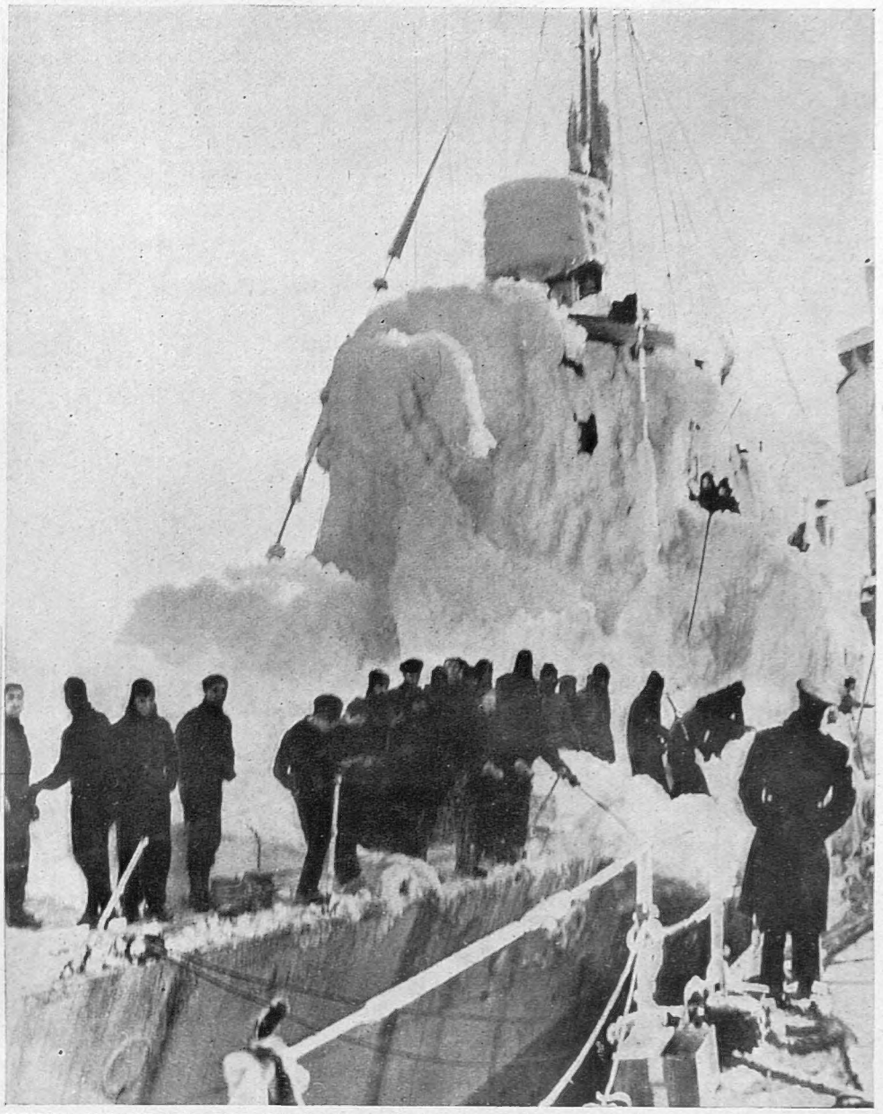
The German High Command looks upon the defence of the occupied countries as " primarily a revolt problem." " If revolt can be held," runs the dictum, " so can the Allies be." Therefore it is well worth von Runstedt's while to indulge all kinds of elaborate stunts, for if he succeeds in getting phantom divisions " identified " in France, he cows the French at trifling cost, and if he succeeds in getting divisions " identified " in Russia when they have not left the West, he confuses for the Allies the issue of the " Second Front," and when it should be opened.

Ruses de guerre ! One of the best was calling the Tank—the Tank.

LATE NEWS ITEMS in PICTURES

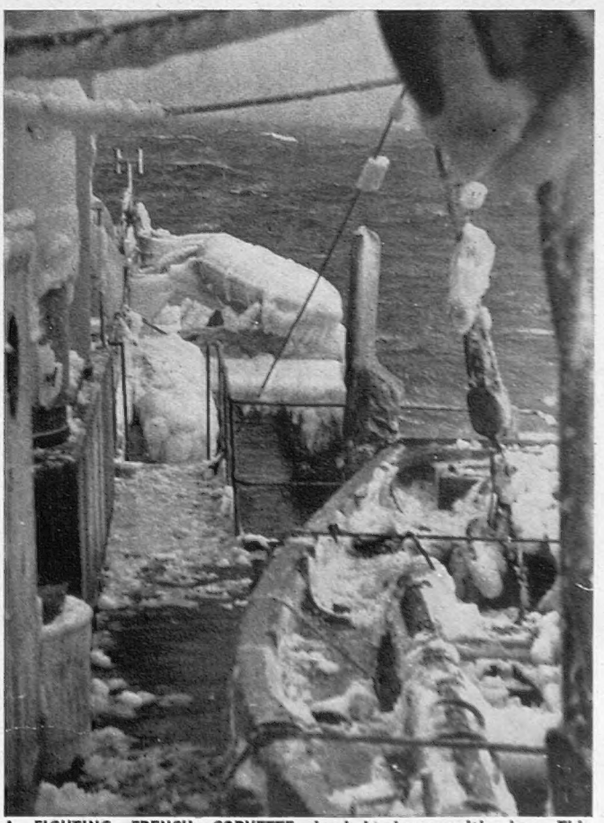
GENERAL GIRAUD MAKING HIS IMPORTANT PROCLAMATION: On Sunday, March 14, General Giraud made his long-expected announcement on future policy in regard to North Africa and on the post-war aims of the French nation. The proclamation was made in the presence of refugees from Alsace-Lorraine; and it was broadcast (by direct link-up) to the United States and Britain. Seated behind is Mr. Harold Macmillan the British Resident Minister

THE MOST ELUSIVE SUBMARINE HOME after a year's successes in the Mediterranean. No British submarine has been hunted more relentlessly than H.M.S. *Taku* (Commander, Lieut. A. J. W. Pitt). Earlier in the war, after torpedoing a large supply ship off the Norwegian coast, she was forced to lie for four hours on the sea-bed while the enemy rained down "a perfect avalanche of depth-charges." Her most recent escape was in the Ægean Sea, where she had to remain submerged for thirty-six hours. This escape followed the sinking of a medium supply ship. After the hunt had been eluded, the *Taku* went on with her patrol. Before returning to base, she sank by gunfire a ship flying a swastika flag and loaded with German soldiers, and also successfully bombarded an enemy-occupied harbour. This picture shows the *Taku's* officers: from left to right are—Commissioned Engineer J. Stevens, D.S.C.; Lieut. Paul-Murray-Jones; Lieut. A. J. W. Pitt; Lieut. Huston Roe Murray; Sub-Lieut. R. G. Carr; and Lieut. P. A. C. Day



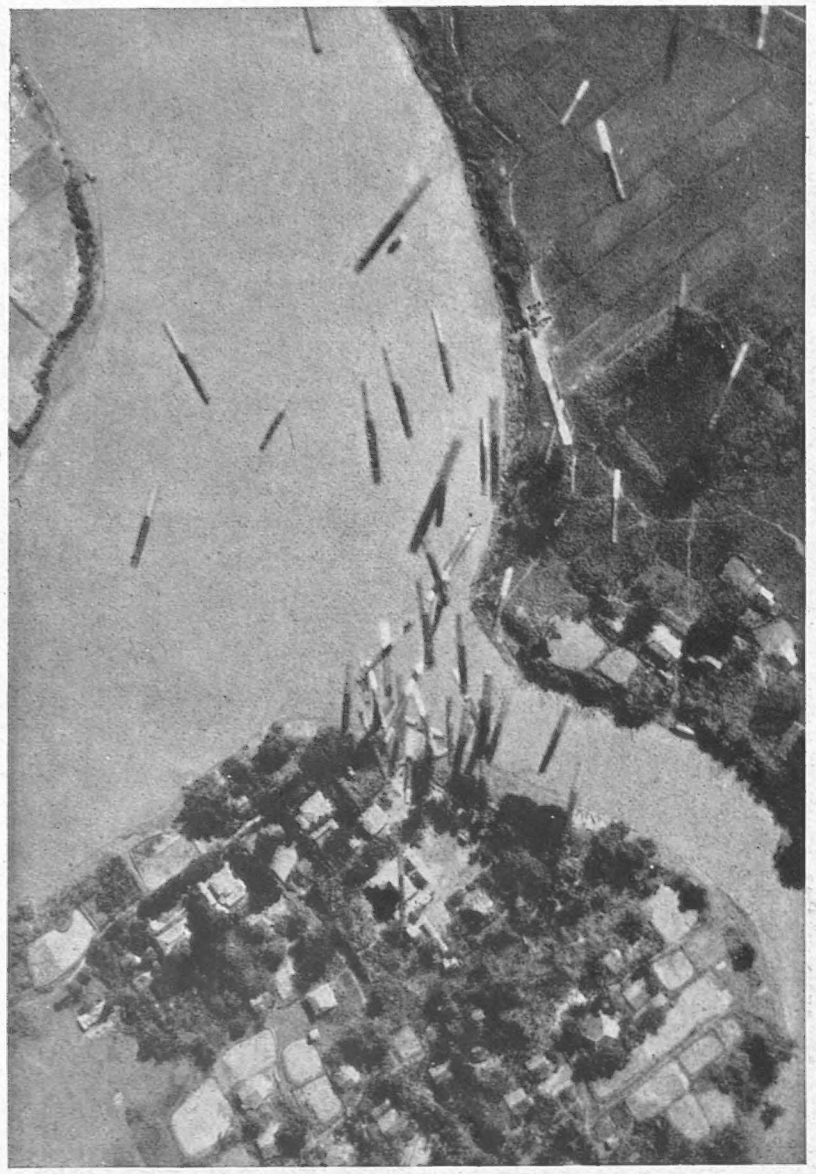
WINTRY WEATHER IN THE ATLANTIC: A British destroyer reaches Canada top-heavy with ice after sailing through heavy seas. This picture was taken as the destroyer entered a Canadian port after a spell of convoy duties in the bitter weather of the Northern Atlantic. The weight of ice on the superstructure was so great that it called for superlative seamanship to prevent her from capsizing! The water in her tanks had to be pumped repeatedly from one side to another to maintain the vessel's balance. This particular destroyer is one of the ex-American ships now sailing with the Royal Navy. Her skipper is Lieut. Allen Campbell, nephew of Admiral Sir Percy Noble (who is now in Washington, but who was previously in command of the Atlantic Anti-submarine Campaign)

THE LANCASHIRE FUSILIERS IN BURMA. Their writing-desk, a bamboo structure in the heart of the jungle. In the swamps and jungles of Burma, the Lancashire Fusiliers are fighting with high courage. They are keeping up the fine tradition which their regiment earned in the past, notably at Gallipoli. The battle they now fight is a grim one—swimming rivers, wading through swamps, combating not only an enemy highly skilled and suited to jungle warfare, but also the natural hazards of this type of territory



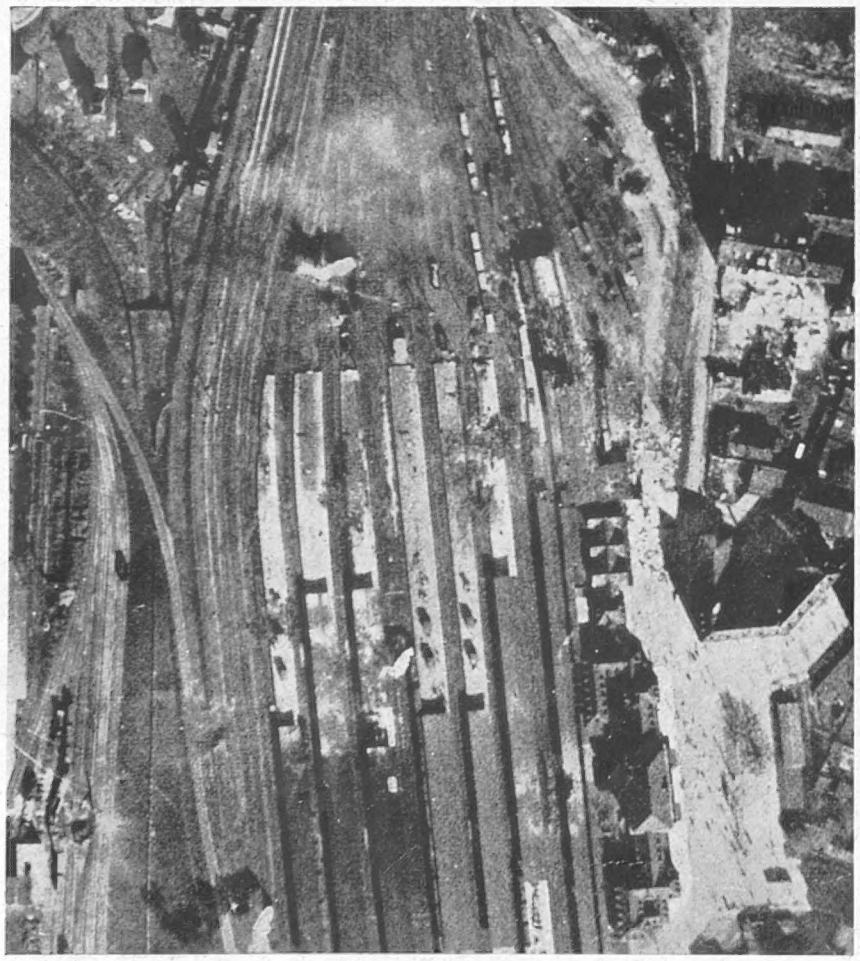
A FIGHTING FRENCH CORVETTE loaded down with ice. This striking picture was taken on board the "Lobelia" during the action in the Atlantic in which she helped to fight a pack of U-boats. An Admiralty communiqué specifically mentioned the corvette, to whom also went the credit of another U-boat probably destroyed

THE NEVER-CEASING BOMBER OFFENSIVE



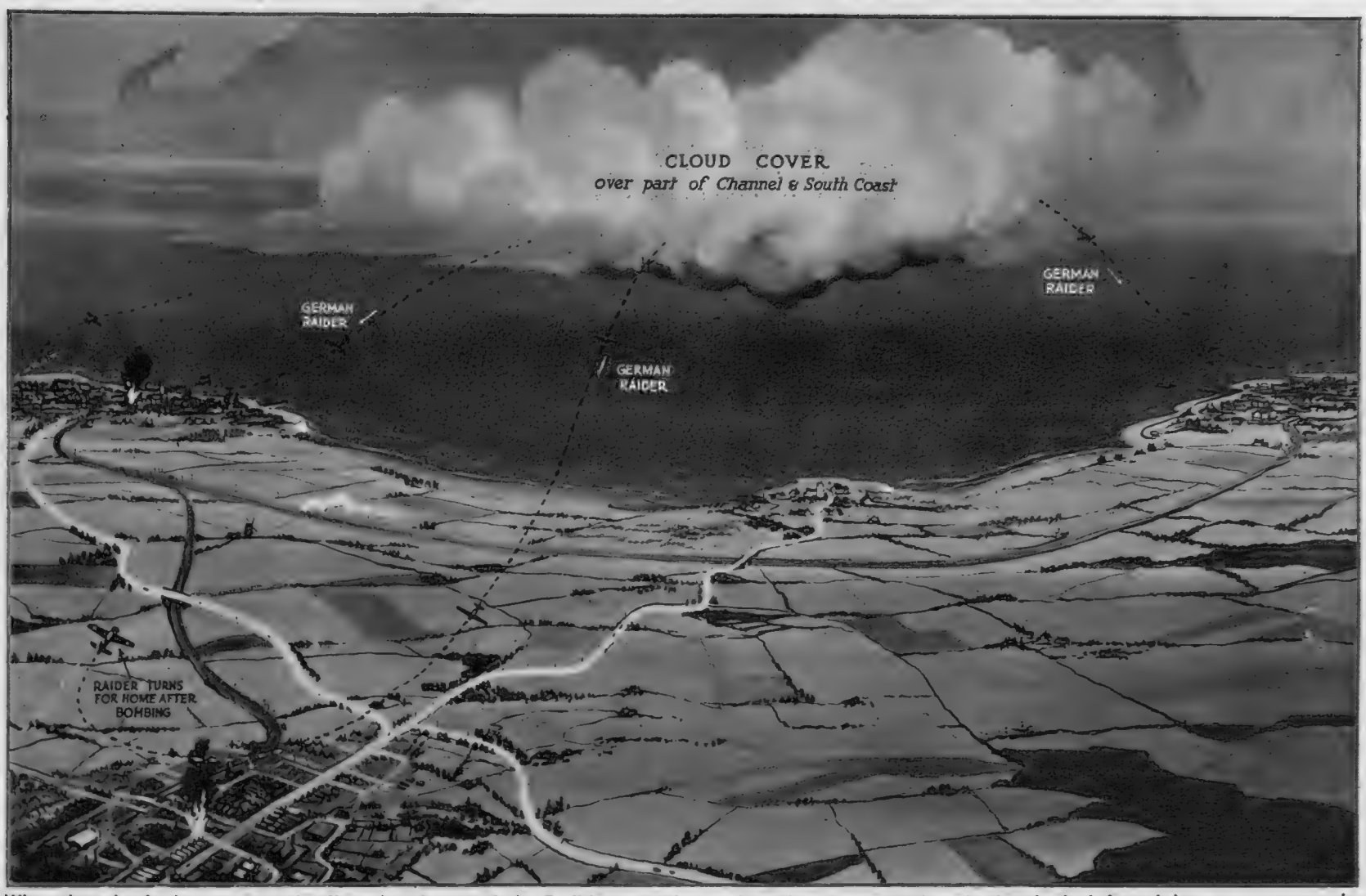
FIRE BOMBS OVER BURMA DURING AN ALLIED AIR ATTACK : In this picture, fifty incendiary bombs are seen falling towards the village of Ngazaunghpet during an attack on Japanese positions in the Taungdaung district on February 20. This is a form of attack to which Burma is particularly vulnerable, owing to the prevalence of wooded areas and the flimsy nature of the buildings and bungalows in which the enemy shelters. During the past few weeks the greatly strengthened R.A.F. and Allied squadrons in this part of the battle zone have intensified the number and volume of their assaults

THE R.A.F. RAID THE BURMESE FRONT OF AKYAB, and sink a supply ship and hit the jetty : Day in and day out, the bombing of Japanese villages, communications and supply bases in Burma by R.A.F. and U.S. bombers goes on. This picture was taken during an attack carried out on the port of Akyab, important Jap supply base. It shows a direct hit on the jetty. On the right is a 1,700-ton supply ship which was sunk in shallow water by the R.A.F. in an earlier raid. The bomber, it would seem, will probably prove a most important weapon in the eventual defeat of the Japanese in Burma, as in the South-West Pacific !



A HEAVY DAYLIGHT BLITZ ON WORLD-FAMOUS HAMM BY THE U.S. : This picture was taken after the daylight raid on March 4 by heavy American bombers. Heavy damage was done to the important railway marshalling yards, and to the installations, buildings and plant of the Vereinigte Stahlwerk there. The above picture shows the scene at the main railway station, after a concentrated attack by the high-flying daylight bombers. There are three hits on the station buildings ; at least five bursts on the unroofed platform and tracks ; several small buildings are damaged ; and there are two hits on sidings (bottom right corner), one of which has wrecked three or four tracks, derailed coaches and caused blast damage to the adjoining loading sheds

FURTHER DAMAGE TO THE KRUPPS WORKS AT ESSEN : In last week's issue we published pictures showing the heavy damage at this spot caused by the R.A.F. raid on March 5. On the night of March 12-13 a second heavy raid was carried out, and ample evidence was soon forthcoming of the further devastation caused among the buildings and workshops. When the reconnaissance pictures of this second raid were taken, two large sections were seen to be battered and, in some cases, still burning several hours after the last of the raiding force had left. The above view, of an area of Essen adjoining the Krupps works, shows how scarcely a roof still remains. Everywhere are the ruins caused by the terrific loads of high explosive



When there is cloud cover over the Channel and part of the English coast, the sneak-raiders approach through the clouds before their appearance can be detected. They break off in various directions, swooping down on to busy little towns along the sea and inland, to strafe the crowded main streets and to drop their bombs on any prominent set of buildings. They then turn back to sea, still seeking cover in the clouds if pursued; if not pursued, they fly off at "nought feet" to regain the protection of the French coast. By this means a few aircraft can cause dislocation to traffic and damage to property, to say nothing of the casualties amongst the civilian population which their bombs and cannon-shells cause—*Drawing by Roland Davies*

The War by Air

TIP-AND-RUN RAIDING

The Sneak-raider and How He Operates; and the R.A.F.'s Counter Along the Coast

Since early in the war, south and east coast towns have been repeatedly subjected to the most irritating form of attack which less vulnerable districts are spared—tip-and-run raids. The first two months of 1943 saw more than sixty-four enemy planes thrust at *one* stretch of our southern shores. Sneak-raiders have accomplished limited military success: the very speed of the attacks and the "zero feet" from which they are delivered make accurate bombing impossible. But presumably the enemy considers their nuisance value to be worth the loss of one sneak-raider in eight, for recent months have seen them become more active.

The purpose of the tip-and-run raid is to create the maximum disturbance over the greatest stretch of coast possible with the minimum number of planes. Surprise is essential to success no less than speed. In ones and twos (seldom more than six at a time), Focke-Wulf 190's sneak across the North Sea and English Channel at high speed, usually making for cloud cover midway between several towns on to any (or all) of which they can pounce, thereby upsetting daily affairs over a wide area. Wheeling to attack, the F.-W.s release one 1,000-lb. bomb each with haphazard nonchalance, and race for home again—sometimes before sirens have an opportunity of announcing their arrival.

This was the *Luftwaffe's* normal tip-and-run method before its R.A.F. equivalent taught it the value of "wave-hopping." To-day, sneak-raiders frequently adopt the low-level method of attack. This forbids accurate bombing, but permits the use of cannon-guns to a considerable extent and offers shore batteries an exceedingly awkward target, while at the same time it makes the R.A.F.'s job a difficult one.

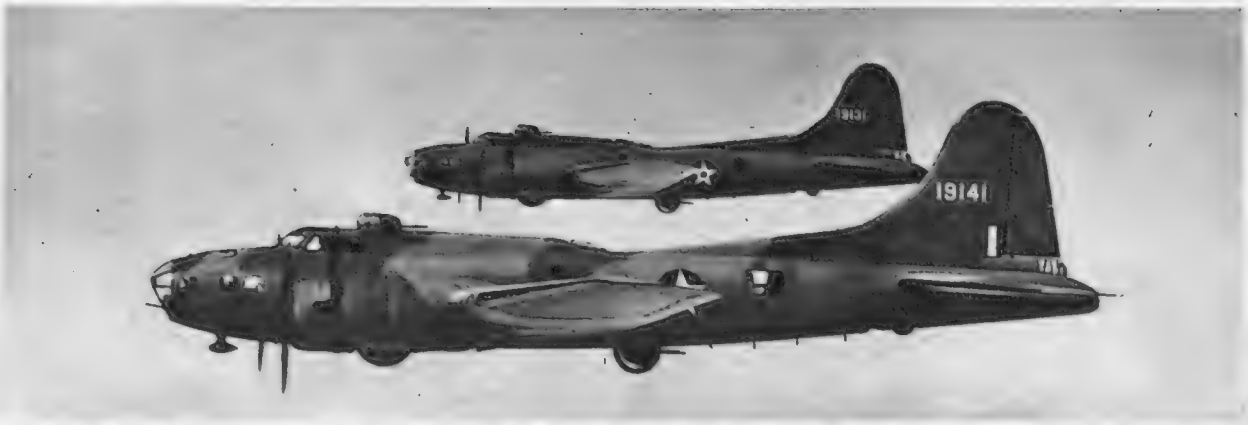
The raider finds advantages in surprise and speed. With enemy 'dromes but five minutes' flying-time from south-eastern England, "surprise" is not difficult to attain; while Focke-Wulfs, with their higher speed, have to a great extent replaced the Me. 109 and 110 in the field of tip-and-run raids.

These "zero-feet" raids make accurate bombing impossible. The bomb's fins have insufficient time to straighten the missile. Falling like an aerial torpedo, it is inclined to "bounce." One bomb bounced over three rows of houses, a tall school building and a goods yard before exploding 380 ft. from its initial point of impact!

The wave-top method of attack, and the R.A.F.'s reply to this type of sneak-raider. Three F.-W. 190's come in, skimming the water, hoping by this means to avoid the defenders' fighters. But the R.A.F. are now making use of the new Typhoon fighter, which has proved more than a master for the Nazis engaged on this sort of adventure—*Drawing by Roland Davies*

The R.A.F.'s answer to the hit-and-run raider is the Hawker Typhoon. This heavily-armed fighter is more than a match for the sneak-raider and it has the speed to overhaul enemy fighter-bombers. But with tip-and-run attacks on coastal towns lasting sometimes only sixty hectic seconds, interception is exceedingly difficult unless R.A.F. fighters are airborne and in the vicinity of enemy thrusts at the moments they materialise.

Measures are being taken to make enemy tip-and-run raids too expensive to be worth while. What these measures are cannot be revealed for security reasons; but we should not be too optimistic regarding their success, for the south coast is still in the front line. Meanwhile, of the several suggestions advanced recently, the request for more light A.-A. guns by people living in vulnerable zones is reasonable; while many of Britain's beaches and sea-fronts (the latter often boasting "drill halls" suitable for conversion into one-plane hangars) could see R.A.F. fighters take off with the minimum loss of time to engage the tip-and-run raiders.



These two aircraft are U.S. Flying Fortresses: it is suggested, in the drawing on the right, that these should form the basis of a new "Flak Ship of the Air," or aerial destroyer

The War by Air

The "AERIAL DESTROYER," or FLAK SHIP

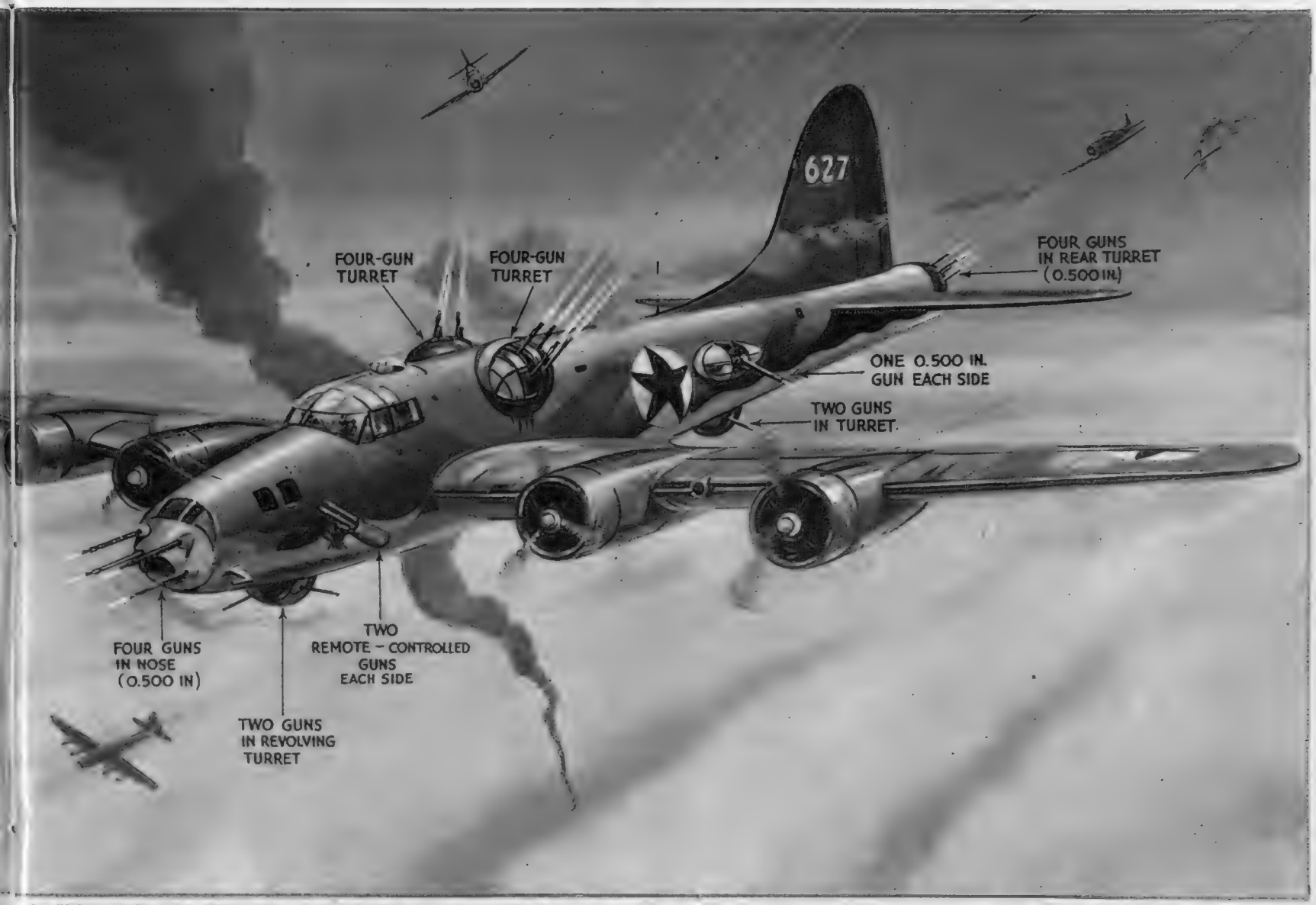
And a Night Impression of Flak over Berlin

—Special Sphere Drawings

The American-built Flying Fortress is a most heavily armed aircraft—so considerable is its armament, in fact, that it has scored very heavily during recent raids, even over German fighter aircraft. This has prompted our artist, Mr. Roland Davies, to outline a new idea for the employment of this giant bomber—as an air flak ship, or aerial destroyer. The Fortress as it exists at the moment bristles with guns: by supplementing these still further, the aircraft should become almost impregnable—a real Flying Fortress, in fact. Our drawing shows the following equipment in guns: four of 5-in. in the nose, firing forward; a four-gun turret on each side of the fuselage, just aft of the pilot's cockpit; a blister on each side of the rear fuselage; a centrally-placed belly-turret beneath the tail, containing two more guns; four guns in the rear turret at the extreme end of the aircraft; and—most interesting of all—two "remote-control" guns at each side of the pilot's cockpit forward. A revolving turret, containing two more guns beneath the nose, would complete the list—twenty-six guns in all! The "remote-control" guns are not so impossible of attainment as might be thought: the new Messerschmitt 210 has been equipped with barbettes, or "blisters," at the side of the fuselage in this fashion. Not only would such an aircraft prove well-nigh impregnable, but it could also escort a whole bomber force to its target, holding off enemy fighters by the sheer weight of its guns

Below—**The Air Path to Berlin.** When our heavy bombers made their big and concentrated attack on Berlin on the night of March 1, their route was plotted by observers on the Continent. From the reports of these, it would appear that the objective was reached by way of Denmark: from Gedser, the harbour for the Warnemunde ferry at the extreme south-eastern tip of Denmark, our Lancasters and Stirlings ran straight across the Baltic down on Berlin from the north. The opposition, both by flak and night fighters, was heavy: there was a clear sky, and the British pilots on their return gave vivid descriptions of some of the fights they witnessed whilst en route to the German capital and whilst over it. The general scene has been depicted in the vivid drawing by Mr. Roland Davies below. "At one period we counted over twenty of our aircraft which had been caught at the top of the various cones formed by perhaps 200 searchlights," said one pilot. "A master beam with a sickly bluish light gropes round, and then immediately it finds you all the beams in the area join in and make a tremendous cone. We were in one such cone for six minutes or more." Another pilot said: "We could see below us a fantastic scene. Against a backcloth of flame, sometimes white from new incendiaries, we could see hanging in the sky our own flares. And then the Germans sent up a firework, an orange ball, which exploded at 15,000 ft., dripping slowly down in orange streaks. The whole scene was surrounded by the probing searchlights." Even on the route out, all the defences seemed to be awake. All the time there were bursts of flak and cones of searchlights. Aircraft could be seen twisting and diving through them as they made their way in to bomb. There were two great cones north of the city. As our pilots approached, the cones split up into separate beams

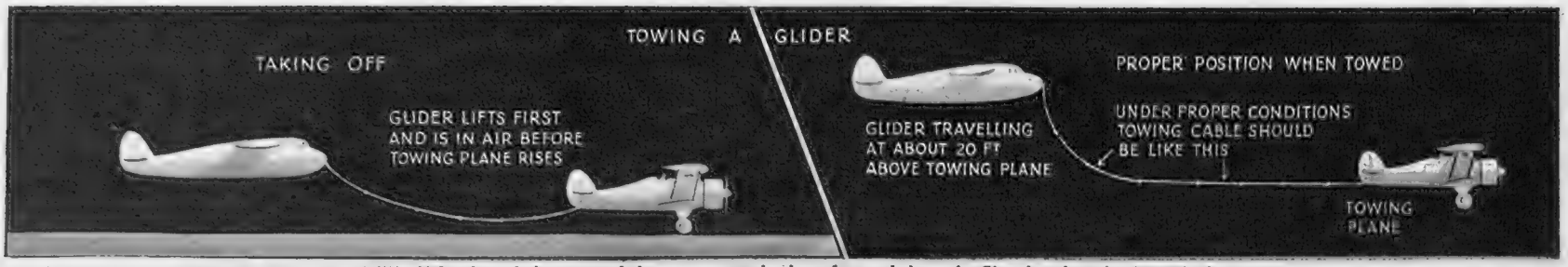
THE AIR PATH TO BERLIN: AN ARTIST'S IMPRESSION, BUILT UP FROM PILOTS' REPORTS, of the terrific searchlight concentrations through which our bombers had to fly to reach the German capital during their last big raid—*Drawing by Roland Davies* (See notes above at left)



A FLAK SHIP OF THE AIR, OR "AERIAL DESTROYER," which could be used to beat off the massed attacks of Nazi fighter aircraft. This huge aircraft could be an adaptation of the existing Flying Fortress of the U.S. Air Force, but heavily armoured and very heavily armed to provide a terrific fire-power from all possible angles, so that attackers would, literally, be blasted from the air—*Drawing by Roland Davies* (See *notes at left*)

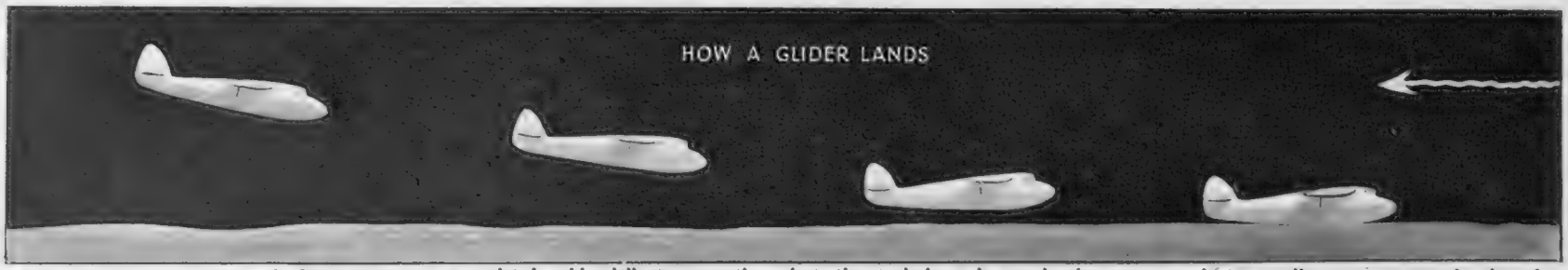
A WHIRLI-BOMBER IN ACTION AT SEA. These aircraft are Whirlwind fighter-bombers, adapted in similar fashion to the Hurri-bomber, and they are now making war on enemy convoys attempting to run through the Straits of Dover under cover of darkness—*Drawing by W. G. Whitaker*

It was recently announced that the twin-engined Whirlwind fighter-bomber has now been adapted (like the Hurricane) to carry bombs. Some of these powerful planes are now being used to bar the Straits of Dover to enemy coastwise convoys: frustrated in their attempts to pass through by day, the Nazis have been of late attempting to slip through under cover of darkness. One large merchant vessel, with a heavy escort, was hit by several bombs from a Whirlwind whilst trying to outwit the R.A.F. The pilot, after sighting the vessel, had climbed to 2,500 ft.; then, diving through the searchlight beams of the escort vessels to sea-level, he came in direct line with the merchantman. He said afterwards that he never thought he would get through the flak, but he dived to deck-level and scored direct hits. As he flew between the masts of the merchant ship a 20-mm. shell struck his tail and two pieces of shrapnel passed through the cockpit. He managed to reach his base and was soon afterwards awarded the D.F.C. for his feat. Reconnaissance later showed that the ship had been damaged and had put back to port for repairs



HOW A GLIDER TAKES OFF when being towed by a powered aircraft, and how it flies in the air ABOVE the towing plane

When a glider is towed into the air behind a powered aircraft, it is the former which becomes airborne first owing to its lighter construction and bigger wingspan. As soon as the initial climb is over, the glider pilot takes up a position some 20 ft. above the towing plane. This is to avoid the turbulent air currents caused by the powered aircraft's propeller. It is usual for the cable to adopt the attitude shown above on the right: it should reach out straight behind the towing plane, and then curves gently upwards. The glider pilot keeps his eyes on the cable and adjusts his aircraft so that there is neither slackness nor tautness in the line. Both pilots have quick-release mechanisms, but it is usual for this to be operated by the glider pilot.



HOW THE GLIDER LANDS: It has no motor to assist in this delicate operation, but the technique is much the same as in a smaller-type powered aircraft. The pilot, having selected his landing-field, glides in and then "touches down" to a three-point landing (if this is made on the glider's wheels), or to a "belly" landing if the wheels have been cast off. The various stages, and attitudes of the aircraft at various points in the descent, are shown above—
Two drawings by Roland Davies

The War by Air

SOLDIERS with WINGS

The Work of the New Glider Pilot Regiment

THE glider pilot is both soldier and airman. He must not only be able to "ride the winds": his knowledge of navigation must be such that he can, with unfailing regularity, pinpoint the exact position of objectives and land his craft hard by points to be stormed.

And his purpose is not restricted to the ferrying of troops. As the glider swoops earthwards in a steep dive to bump and slew to a silent standstill, its pilot is transformed from airman to soldier. He commands the unit he has been carrying. Whether an infantryman, sapper or demolition expert, he must be as good a soldier as airman. And to fulfil this dual purpose his training covers perhaps a wider range of subjects and aspects than that of any other Service "specialist" force.

The glider pilot is a volunteer—a carefully selected, mentally and physically perfect *young* man, with cool nerves, capable of passing a rigorous R.A.F. "medical." He must possess that "little something," that germ of grit and determination, which, developed by special training, produces the perfect fighting man.

Having completed a course in military training designed to develop initiative no less than to toughen, the young volunteer finds himself at an aerodrome. From Army instructors he passes into R.A.F. hands.

From R.A.F. classrooms he clambers into a light power-plane. And not until he has blossomed into a proficient pilot is he introduced to that superbly graceful creation, the sailplane, by glider aces whom pre-war crowds watched soaring with effortless grace over British fields.

The volunteer learns the value of thermals (up-currents born in differing earth temperatures), cloud-streets (currents accompanying moving clouds), and slope-winds (breezes deflected upwards by sloping surfaces). He learns to "ride the winds" into battle. Night sees thermals go into reverse; i.e., with the sun's death, air over heat-reflecting surfaces (standing corn, sand, etc.) becomes static, while from warmth-retaining surfaces (water, for example) columns of warm air rise. In yellow-painted training gliders the pilot learns the marked difference between day and night gliding conditions. He learns to soar through the blackout, to glide (say) 20 miles after release by a tow-plane, to pinpoint objectives, glide earthwards with the silence of an owl and land hard by chosen points.

Comes the day when the trainee races across the 'drome behind a Hector tow-plane in a heavily made, troop-carrying glider. Military gliders are exceedingly manœuvrable. "Avoiding action" is well within their capabilities. At the same time, Army machines, heavier than the current-soaring sailplane, "bump." Especially is this so in the case of heavily laden gliders—for which reason the end of the trainee's course sees him take a load of men aloft. With a wry grin, one of the latter says: "We're known as the glider pilot's 'guinea-pigs'!"

The resilient, some-hundreds-of-feet-long hemp or manilla tow-rope (cable proves unsuitable) tautens and trembles as the tow-plane moves noisily forward. Behind the "loco" surges the glider. The latter rises first. It races six or eight feet above and (behind) the tow-plane. Then the latter lifts itself from the 'drome, and the glider and its "tow" climb at a low angle.

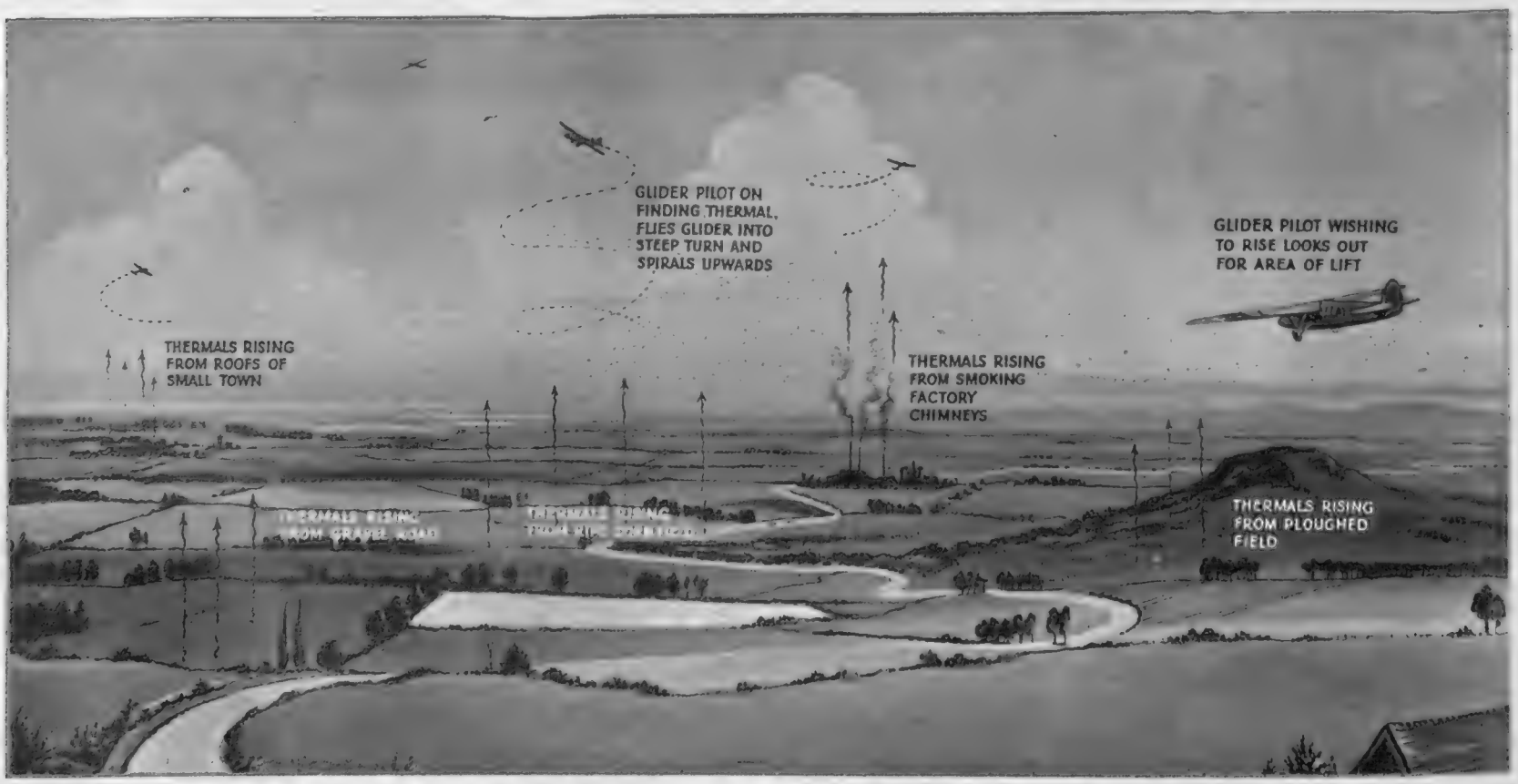
At (say) 5,000 ft. the glider pilot releases the tow-rope with a special mechanism. The latter trails behind the "loco" for a few moments. Then it is dropped in a specified area to be retrieved by ground personnel. Power-plane and glider go their separate ways.

Landing can be a difficult job. The glider's low landing speed (30 to 40 m.p.h.) and its skids permit it to land on 50-ft.-long plots, so long as they are obstacle free.

The touch-down may be bumpy. But "clean" touch-downs are essential to the success of troops detailed to storm strong-points. And the glider pilot pays special attention to the question of landing in the dark.

Wearing "wings" on his tunic, the glider pilot learns all about every type of operational glider. He was a first-class, toughened soldier, well trained in the use of light weapons, dynamite, etc., and "shock" tactics, before he became a pilot of silent wings.

Day and night trained pilots continue to "feel the wind," to "keep their hands in" while fresh batches of volunteers arrive at R.A.F. glider-training 'dromes to swell the numbers of Britain's soldier-airman regiment. We can expect much of them when the time comes.



"THERMAL SOARING," or how a glider pilot can make use of air currents to help him to gain height (and thus extend the period of his glide) after he has cast off from the towing aircraft—*Drawing by Roland Davies*

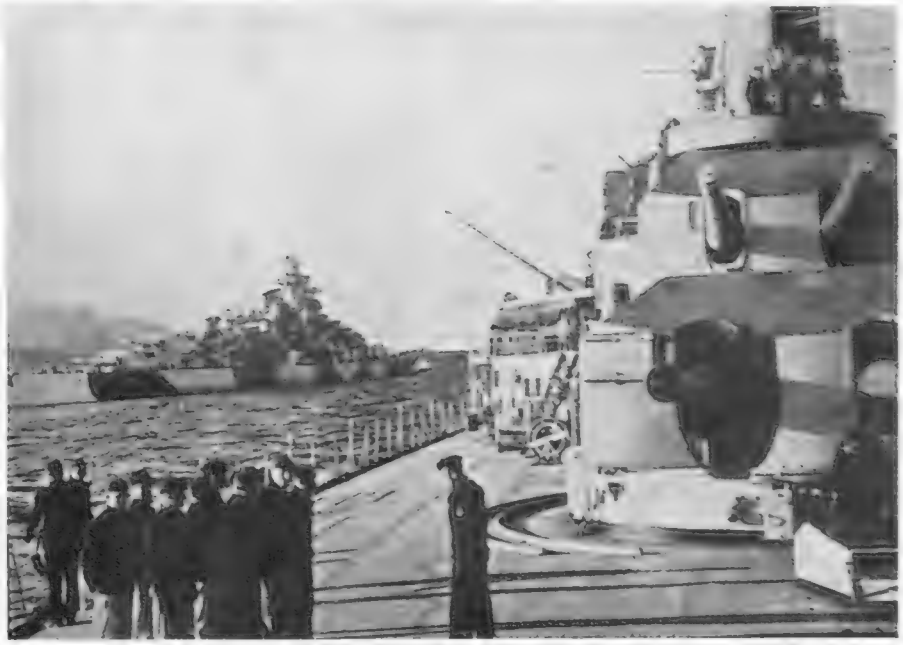
Once the glider pilot has cast off from the towing aircraft, he must put his machine into the correct gliding angle, and, within a measurable period, he must then effect a landing. But there are methods whereby—even after the towing plane has been abandoned—the pilot can actually *gain* height, and thus extend the period of his glide and, in consequence, the area in which he must select a landing field. To do this, he finds a thermal, or rising current of air, on which he can spiral downwards. Some types of ground, such as marshes, tend to absorb heat; others, such as cornfields, ploughland, tarred roads and chalk, tend to radiate heat and warm the surrounding air. This warm air rises in currents strong enough to bear the glider upwards with it. During training, the pilot is taught how to recognise thermals and how to make use of them for his own purpose.

From the WORLD'S BATTLE FRONTS

HOW THE GERMANS ATTACK ON THE RUSSIAN FRONT: A raiding party of the enemy "mopping up" near Kharkov. In the house, a small Soviet reconnaissance unit had taken cover. German soldiers, supported by an armoured car, are moving up to attack it. This picture has reached London from Germany via a neutral country

A FIRST PICTURE OF THE DAMAGE DONE IN MILAN BY THE R.A.F. A whole block of solid buildings in the north Italian city has been wrecked, as the result of one bomb dropped during the heavy raid carried out on Milan recently. It is known that the city has suffered considerably

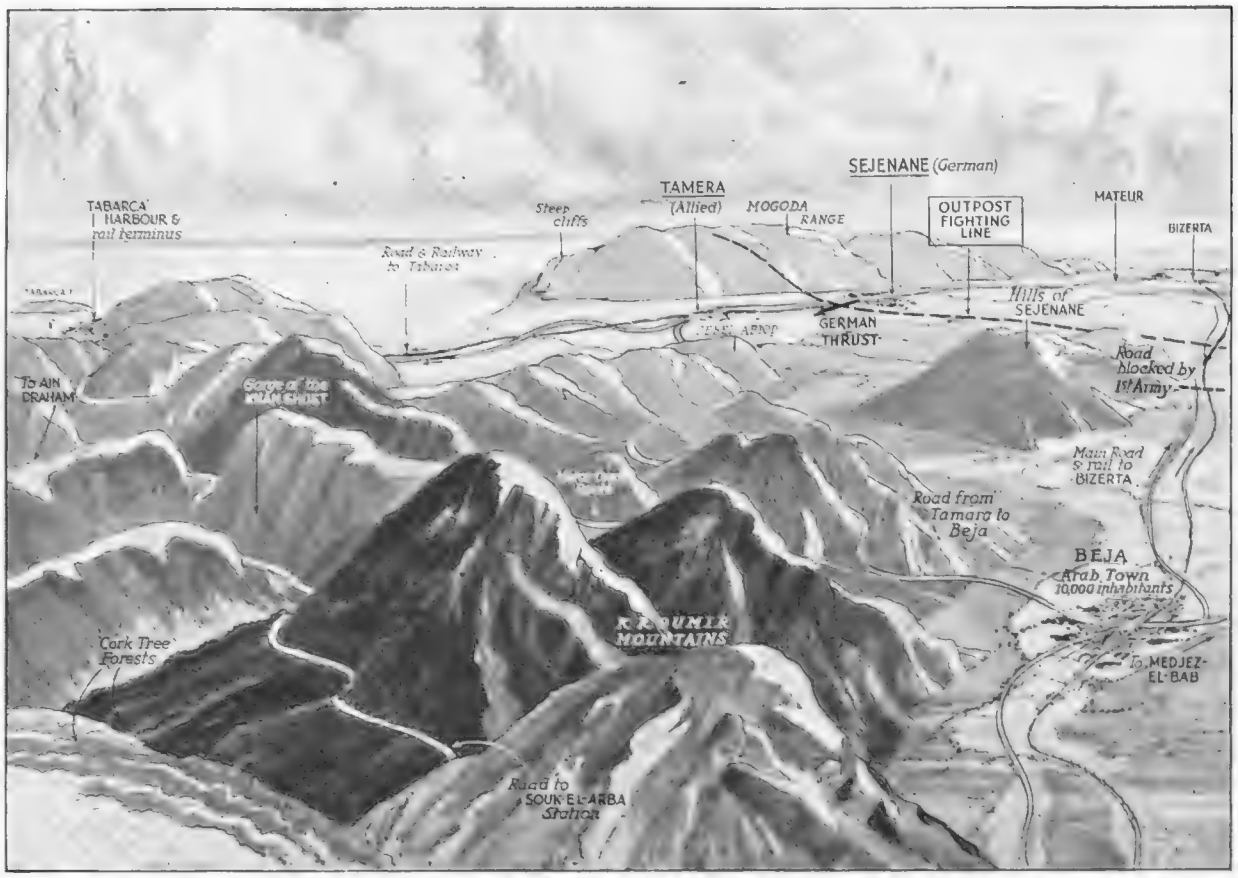
ONE OF THE MOST REMARKABLE SALVAGE FEATS IN MARITIME HISTORY: This was recently accomplished off the Australian coast after a large freighter carrying cargo worth nearly £3,000,000 ran aground and broke in the middle. The forward half of the vessel floated into deep water, and a day or two later was taken to port. Working from barges and lighters, constantly pounded by heavy, and at times mountainous, seas, at the risk of explosion and fire from petrol, a salvage party recovered all but £100,000 worth of the cargo. This party had been formed in the Middle East, the personnel being drawn from infantry, artillery, engineers, signallers and A.S.C. The whole of the work was carried out in the midst of great danger, and numerous acts of heroism were performed



THE NAZI FLEET CONCENTRATED IN FORCE OFF NORWAY: A picture just received in London via neutral sources. A powerful concentration of German warships (now under the supreme command of Admiral Doenitz) has been assembled in the Trondheim area in the north of Norway. There is a possibility of a break-out in strength to attack the supply routes to Russia, which would, of course, involve one of the great sea battles of this war between German and British ships. The main items of the German fleet are the very powerful *Tirpitz*, sister ship to the *Bismarck*; two large and modern 8-in.-gun cruisers; and a number of destroyers. This picture was taken on the deck of the *Prinz Eugen*: in the background is the *Tirpitz*, "sailing out to sea"

TRAINING ARMY SLED UNITS IN NEW ENGLAND, U.S.A. In a flurry of snow the sleigh-mounted machine-guns and their crews start off. High up in the New Hampshire hills, at Wolancet (which touches the Canadian border), the U.S. Army are training sled dogs for use under actual battle conditions, where snow might make other types of transport impractical. At the Chinook Kennels near Wolancet the dogs are trained to work with guns exploding near, and to travel through smoke-screens without fear. The dogs are, of course, the famous "Huskies" of the Far North

U.S. SOLDIERS LOAD A MACHINE-GUN AND AMMUNITION on a sled pulled by "Huskies" as they prepare to start off on manœuvres



AT THE NORTHERN END OF THE TUNISIAN FIGHTING AREA: The strange gorge country around Sejenane, where the fighting line extends northwards from the Mogoda Hills—*Drawing by Percy Home*

Correspondents who have been inspecting the Tunisian battlefront have commented on the varied nature of the fighting terrain. The northernmost section is, in many ways, the strangest. Bounded by hills which drop down to the sea as steep cliffs on the north, this area reaches southwards to the Beja Valley, where the country changes to more rolling hills and shallow valleys. The Sejenane area backs on to a district known as the Kroumir, where the roads climb to rough rocky heights or plunge down into fantastic gorges, such as those of the Khanguet. The railways skirt this mass, one running through Tamera to Tabarca, the terminus of the coast-line from Bizerta and Tunis. The southern line runs through Beja on its way to Constantine. Between these two lines is a wild country inhabited by a primitive mountain folk whose turbulence caused considerable trouble when the French first occupied Tunisia. Wonderful panoramas of scenery are gained from the high points; at other places the roads pierce great forests of cork oak, carpeted with ferns, myrtles and creepers. Beja, on the south, is a fairly large Arab town, dating from Roman times, with remains of the old Byzantine walls. Tabarca on the north is also Roman in origin: it has a large sardine-fishing industry. Ain-Draham is notable for its hot springs which were used by the Romans and which are still in use to-day.

FIGHTING TANKS IN TUNISIA

The New "Stand Still" Tactics of the Big Fighting Vehicles—*Special Sphere Drawings*

HOW TANK TACTICS ARE DEVELOPING IN TUNISIA TO-DAY. It is usually assumed that tanks fire whilst on the move: to-day, in Tunisia, they are most useful when providing a close-range artillery barrage. For this purpose, they fire only when standing still—often concealed by dips in the ground, or by bush- or tree-cover. This scene shows rolling country to the south-west of Mateur, with Churchill tanks in the right foreground concentrated for an attack on a group of advancing enemy vehicles—*Drawing by W. G. Whitaker*

AN ODD ENCOUNTER IN THE STRANGE TERRAIN OF THE MARETH LINE: A British officer faces a German officer across a wadi 15 ft. deep. Armed with revolvers, both are just out of effective range! In this region, the country is seamed with gullies like the above, flattish on top and with sides too precipitous for cars or tanks to scale them—*Drawing by Edward Osmond.*

The incident recorded by our artist above occurred during a patrol in the Wadi Zigzaou region in front of the Mareth Line. An officer who was leading a daylight reconnaissance stood up to get a better view over the bank of a wadi—and found himself facing a German standing up on the other side! He stared at the German, and the German stared at him. They were both just beyond revolver-range—and neither had any other weapon. Each eventually turned round and rejoined his party under cover. The enemy were engaged in mine-laying, probably, joining up long-established but scattered minefields around Zigzaou: these minefields are an ever-present danger for our patrols in their reconnaissances around the Mareth Line positions. The nature of the terrain here is curious in the extreme, differing considerably from the country back in Tripolitania and Libya. The maximum effective range of a Service revolver would be about 30 yards: the German across the wadi in this picture would be about 80 yards away. Incidentally the automatics in use in the German Army usually have a longer range than our weapons

TANKS IN TUNISIA—

So far as can be judged from reports from correspondents, the British tanks in Tunisia have been playing a game something like this—a battalion of infantry has been deputed to take an enemy position, usually a hill. In support, a squadron of tanks has been despatched under a smoke-screen to the flanks of the hill, where it has taken up battle positions hull-down, or behind cover, the heaviest armour and guns facing the enemy. During the infantry attack, these tanks have had to hold at arm's length any German tanks which might try to cut our infantry off from the main British or American body. They have done this by firing at the enemy tanks as soon as they have appeared. The enemy tanks have usually returned the fire, and the tank action has developed into a stationary artillery duel, while the infantry have meanwhile accomplished—or failed—in their task.

When tanks ride easily and guns are small, it is still feasible to fire on the move. But when tanks lurch about, like some models with high superstructures, and have large guns that kick badly and that require precision sighting and laying, it is obviously best to stop before firing. In turn this necessity imposes limitations on the uses to which tanks can be put: they become mobile artillery and adjuncts to infantry rather than independent fighting units.

The failure of Rommel's little offensive through the Kasserine Pass demonstrated the contemporary limitations of thrusting tank columns. His impetuous armour was able to create a temporary stir, but had to retire when the defenders brought up determined reinforcements of all arms. If tanks have never, in the last resort, been capable of holding ground permanently on their own, they are still less capable of it under present conditions, when they require stable positions and the backing of other arms to be effective.

AN IMPRESSION OF TWO CHURCHILL TANKS, mounting 6-pounder guns, going into action in the Mansour sector in Tunisia. On this occasion, the Churchills were acting in co-operation with a Field Regiment of Royal Artillery, and at least two enemy vehicles were knocked out

The "FRIGATE" RETURNS to the ROYAL NAVY

An Historic Name which is Being Revived to Describe a New Class of Bigger Corvette with Heavier Armour

IN his review of the work of the Royal Navy in the House of Commons on March 3, Mr. A. V. Alexander, First Lord of the Admiralty, made an announcement which must have been welcomed by many Naval officers. He said in the course of a long and very comprehensive statement: "The corvette fleet, in spite of losses, now numbered well over 200. We have a new and heavier type of corvette, with heavier armour. Some of them are already in use. It has been given a new name to distinguish it from the previous corvette. It is proposed to call the new corvette the frigate . . ."

In such fashion, then, the country learned of the re-birth of a type which during the time of Nelson earned great renown. Though frigates existed both before and after his day, it was during the Nelson period that these swift and handy vessels came to their highest point of development.

They were much more slenderly built than the great, ponderous Ships of the Line, and their great outstanding virtue was their speed. They were, in fact, the fast cruisers of their day and their tasks were much the same as their modern counterparts—but with the difference that all their work was dependent on the winds! They carried a mass of square-rigged sail on three tapering masts and a cluster of jibs and foresails above the long bowsprit which was braced to give it strength. The frigate of Nelson's day carried anything from twenty to fifty guns (although some of the larger vessels sometimes mounted even more): these were usually arranged on the main and upper decks. Their work was to chase the enemy out of the Channel, and to watch the movements of ships blockaded in harbour during the French Wars. They were, too, the "Eyes of the Fleet" and the means of communication with home bases. A fast frigate would often be detached from her other duties and sent home with messages, returning with eagerly awaited mail.

Just as modern fleets can never possess enough cruisers, so Nelson felt the shortage of frigates in his day above all else—especially after the Battle of the Nile, when Napoleon and his army had been trapped in Egypt. Nelson is reported to have cried, "Give me frigates," and to have said that, if he had died at that moment, the word "frigate" would have been found engraved upon his heart! In the event, Napoleon managed to slip back to France, with consequences which all the world knows.

There are many stories of brilliant actions in which frigates took part, almost too numerous to mention here. As a general rule, however, frigates did not take part in Fleet actions. Their encounters were almost invariably with vessels of their own class.

THE WAR BY SUBMARINE: One of the dangers to an underwater craft whilst in tropical or sub-tropical waters—*Drawing by Montague Dawson*

When a submarine is patrolling through tropical waters by night it has to surface with great care: if it comes up too quickly there is a danger that it may cause a burst of phosphorescence as the sea foams round the superstructure, in which the moving vessel would stand out black and clear. This did not matter in the days when the sky was empty of watching aircraft, but to-day it is a serious danger which the submarine commander must consider. Every roll and motion of the ship sends out flashes of light. Note, in the above drawing, the angle of the hydroplanes at the vessel's bow

THE NEW FRIGATES AND THE OLD: IN THE BACKGROUND OF which has greatly distinguished itself in this war. The old sailin

AT the opening of the present war, a new-old name was reintroduced to the Royal Navy—that of the "corvette." For the past two or more years, this type of vessel has been to the fore in the never-ceasing campaign against the U-boat, taking over many

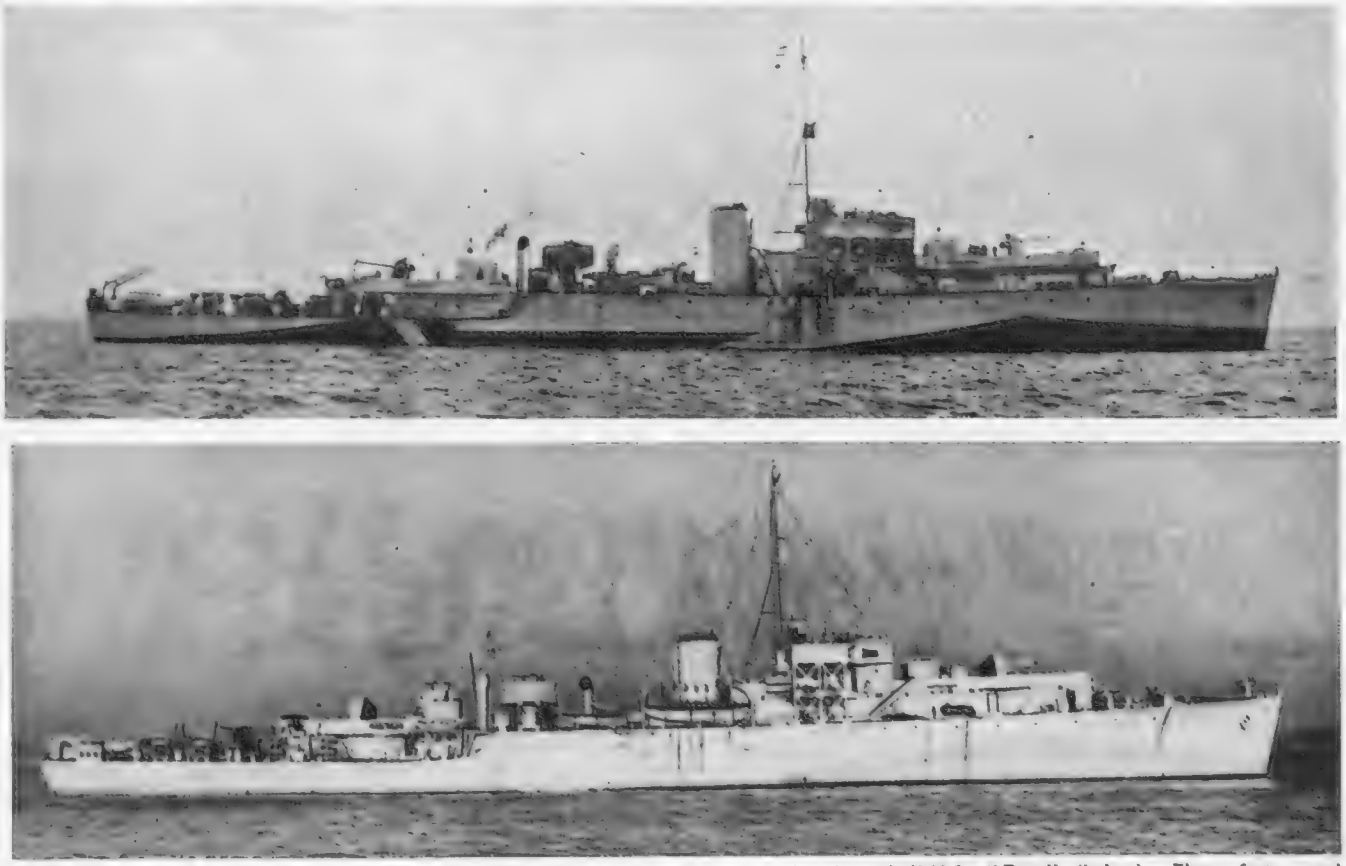
SUBMARINE WARFARE IN THE SOUTH PACIFIC. Whilst on a war patrol (during the course of which she sank a Jap destroyer and a convoy of four enemy ships), the U.S. submarine *Wahoo* came across this small fishing-boat becalmed in the South Pacific: three of the crew of nine aboard the small craft had died when the submarine found her, and the remaining members of the crew were without food or water. This picture shows the sub-mariners handing water and food to the fishermen. It was a few days after this incident that the *Wahoo* fell in with the enemy vessels and destroyed them. *Wahoo* is one of the latest type of U.S. Fleet submarines, of "cruiser type": she was laid down in June 1941 as one of the seventy-three vessels of the Gato class. These are submarines of 1,525 tons, with a surface cruising speed of 21 knots

THIS PICTURE IS AN IMPRESSION OF THE NEW CORVETTE-TYPE "FRIGATES" WHICH HAVE NOW JOINED THE ROYAL NAVY. They are larger and faster types of a class frigate seen in the foreground is of the period 1780-1800, the heyday of this fine class of wooden fighting ship: it was a vessel of 780 to 800 tons, and this type mounted forty to fifty guns. It was Nelson's ideal fighting craft—*Drawing by Montague Dawson*

duties of the destroyer in this deadly warfare. Now the "frigate" has been evolved out of the corvette. The "River" class vessels are, in future, to be known by the old name so familiar to all readers of Nelson history. It is known that the River class are faster and heavier than the ordinary type corvette, but few other details concerning them have yet been released.

Up to the present, the Flower and Kingfisher class corvettes have best been known to the public—and especially the former. These ships are between five and six hundred tons displacement, and they normally carry a crew of around sixty. They are handy craft, not too comfortable in heavy weather, but admirable for their purpose, which is the escorting of Atlantic convoys. In addition to anti-aircraft and other weapons, corvettes carry depth-charges; when submarine hunting — like destroyers — they can turn almost "on their heels." Speed is not great, but sufficient for their specialised tasks.

Corvettes can be turned out very quickly in the naval yards of Britain and Canada; and it is likely that the same will prove true of frigates, despite their greater speed and heaviness.



TWO EXAMPLES OF THE ROYAL NAVY'S NEW FRIGATES: H.M.S. "Ness" (above) and H.M.S. "Test" (below). These faster and heavier corvette-type vessels are officially known as River-class corvettes. No details as to their armament, etc., are available

War on the Eastern Front

The SECOND SUPPLY ROUTE to RUSSIA

—by Way of the Persian Ports

WHEN the Anglo-Russian forces advanced into Persia just over a year and a half ago, one of their objectives was to obtain a supply route to Russia. As soon as the short resistance was over and the Allies granted free use of railways roads and ports, work was at once begun upon improving the means of communication. There was only one main route—from the port of Bandar Shapur, on the Persian Gulf, through Teheran, to Bandar Shah, on the Caspian. No through railway connection with the Caucasus existed as the line from Russia ended at Tabriz, while the line from Teheran only extended as far as Kasvin.

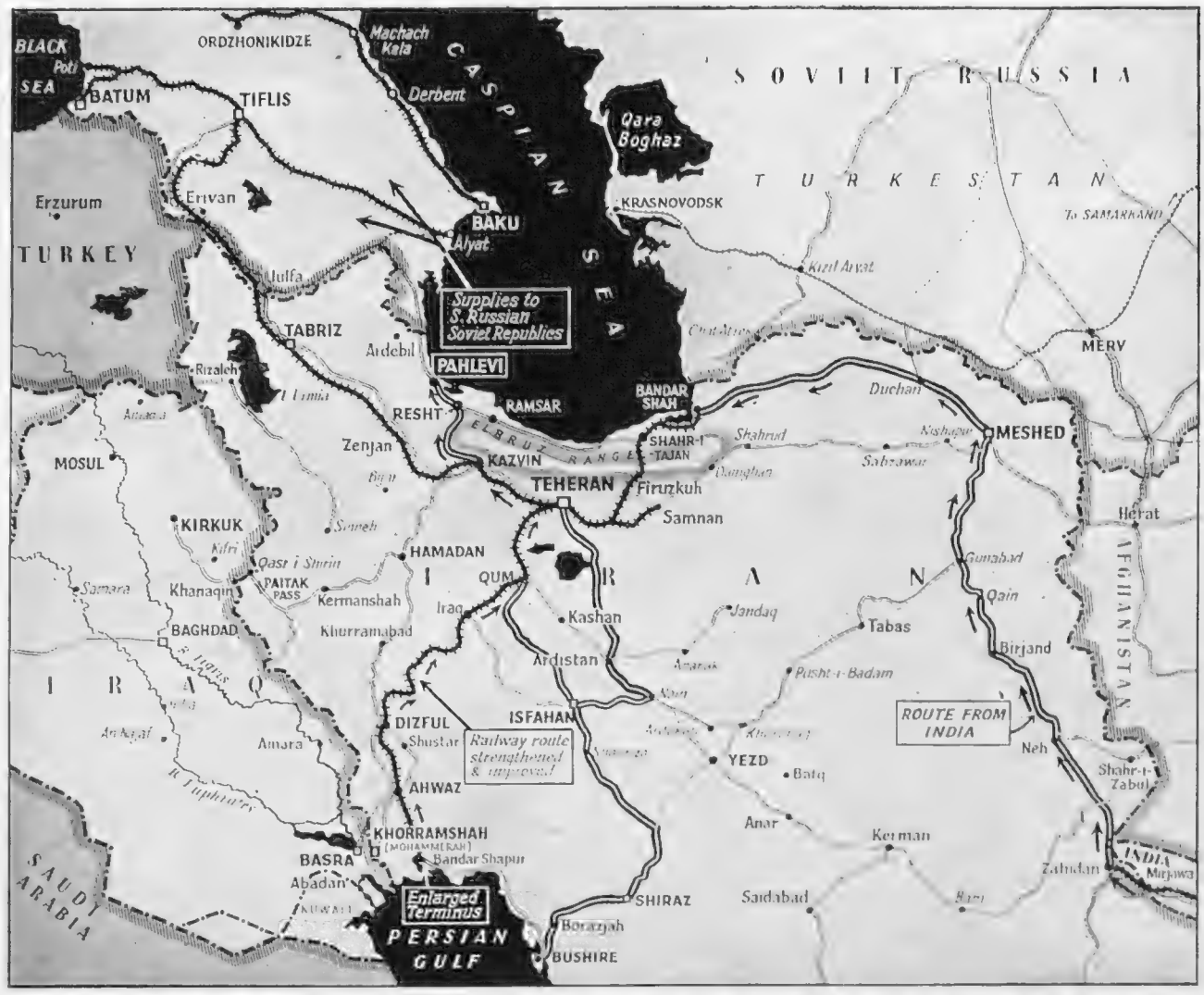
Before supplies could reach Russia in any large quantity, steps had to be taken to develop the railways, to improve the roads and enlarge the ports for the reception and carriage of continuous and heavy goods. The Trans-Iranian Railway required complete reorganisation—sidings had to be lengthened and new ones constructed, and the whole line prepared for a vast traffic. Locomotives and railway wagons soon arrived from Britain, accompanied by a trained staff of engine-drivers signalmen and fitters, who not only ran the trains, but had to instruct the Persian railway staff in the method of dealing with ten times the amount of traffic to which they were accustomed. Repair shops had to be constructed for general maintenance.

Since the United States came into the war in December 1941, the Americans have taken a great part in the work begun by the British engineers. Under General R A Wheeler, of the U.S. Army, contractors aeroplane manufacturers and engineers took up the work, and with thousands of American technicians set about making extensions of the railway, building new roads and enlarging docks. The branch line between Khorramshah (the port on the Shatt-el-Arab, at the head of the Persian Gulf) and the main line was completed in April last and opened at the beginning of May greatly increasing the flow of goods through Persia to the Caspian Sea and from there into Russia. Work was also undertaken to connect Kasvin by rail with Tabriz, which would bring Teheran into direct rail communication with the Caucasus.

Supplies have also been coming from India, across Baluchistan, on the railway from Quetta to Lahidan (formerly Duzdap), the terminus. This line, which had been used in the last Great War, had fallen into disuse, and had to be reorganised and thoroughly repaired. From Lahidan all supplies had to go by road to Meshed, in north-east Persia, the lorries being driven by Indians. As many as 10,000 labourers have been employed on improving and maintaining the surface of the road

The ports on the Persian Gulf—Basra, Khorramshah, Bandar Shapur and Bushire—have become centres of huge activity. A new jetty has been built at Bandar Shapur and the port enlarged in order to deal with the cargoes constantly arriving. New roads have been constructed along which thousands of lorries are passing daily.

B. H.



HOW RUSSIA IS BEING SUPPLIED, by way of land and sea routes through India, Persia and the Caspian Sea. A continuous flow has been made possible because of the immense amount of engineering work carried out at the various ports and along the rail and road routes shown here—*A special* Sphere *map*

THE RED AIR FLEET

Some Notes on Its Composition

THE Red Air Fleet resembles the *Luftwaffe* more closely than it does any other air arm. It is significant that very little long-distance, or so-called "strategic," bombing has been done by either side in the Russian conflict. Apart from an occasional raid on Berlin, and similar gestures by the Nazis each side has used its air force as a "close support" arm, working in and over the immediate battle-line, and rarely bombing farther back than the enemy's supply lines and nearer bases. The closest parallel in our own case would be the work done by the R.A.F. under Tedder with the Eighth Army One would look in vain in Russia for anything comparable with the huge development of our own Bomber Command—not because of lack of ability to create it, but because Russian strategy has been based on a policy more akin to naval warfare in which destruction of the immediate opposing force is everything and territorial exchanges much less important. One heavy bomber is much less useful in such work than a dozen tank-busters.

On the size of the Red Air Fleet there is little use speculating, they have had about 2,500 machines from us, and they have always been able to prevent the *Luftwaffe* gaining anything like air supremacy, so that their own output must be substantial, even though the numbers the Nazis claimed to have shot down were exaggerated. Their three best-known designers are Alexander Yakovlev, Sergei Ilyushin and Andre Toupolev Yakovlev is the designer of the Yak fighter, a single-seat fighter with a cannon firing through the propeller hub. It is with this machine that Russian pilots carry out their propeller-nibbling tactics, and the whole machine is said to be surprisingly light and fast, quite equal to the Heinkels and Messerschmitts it had to face. Yakovlev has had a name for being able to get more speed for a given horse-power than any other designer

Toupolev has been designing heavy bombers for the Russians since about 1920. It was one of his efforts that was used for the trans-Arctic flight to America, and it was his latest effort, the TB-7, which carried M. Molotov This machine is the standard Soviet heavy bomber about equal in size to our own Stirling. An all-metal machine, it is said to have four engines of 1,330 h.p., and the one M. Molotov flew in was certainly well armed This is probably the machine the Russians use for their occasional raids on Berlin

RUSSIAN PILOTS, in the equipment worn during operational flying over the Eastern battlefront, in front of one of the PE2 high-speed bombers built in Russian factories—*Drawing by Roland Davies*

Reports brought back by British pilots indicate considerable differences in the personnel side of the Red Air Fleet. There is, to start with, the practice of paying fighter-pilots a bonus of several hundred roubles for every enemy plane destroyed. Ground organisation was described as looser and less formal than our own, but none the less efficient. Aerodromes were constructed at prodigious speed, and Russian pilots and mechanics showed great aptitude in mastering the details of our machines. Until recently, it was very difficult to distinguish a Russian airman, out of flying kit, from any other Russian soldier, for the Red Air Fleet is an army co-operation force and wears the same khaki—or, rather, olive-drab—dress. Very recently, however, new badges, shoulder-straps and insignia have been introduced to show more clearly the wearer's rank and the branch of the Service to which he belongs

F. A. Nolan

MAKING A LANE FOR THE ALLIED SUPPLY SHIPS APPROACHING THE WHITE SEA BASES IN NORTH RUSSIA: An ice-breaker at work, crashing into the heavy Arctic pack-ice. The vessel shown is the "Stefan Makaroff," of 3,150 tons (built by British shipbuilders in 1916), and one of the largest ice-breakers in the world. She carries aircraft for protection and for survey, and a catapult for launching them from the stern. Her maximum speed would be 14½ knots, and she would carry a crew of some 250 men—*Drawing by Wm. McDowell*

RUSSIA'S ARCTIC DOORWAY

The Conditions our Seamen Endure on the Northern Convoy Routes

FOR Britons who can walk to the coast and stand "in the next parish to America," who can cross the Thames, Mersey or Clyde and look down on unclosable highways to the world's four corners, it is almost impossible to visualise the position of Russia. This vast country, larger than Canada and Australia together, now has in Murmansk its only principal port open to the world the year round. All the others are limited by climatic or military considerations—even Vladivostock opens not on to the Pacific, but to the Sea of Japan.

Hence the extraordinary energy which the Russians have given to the development of this harbour which not so long ago was a cod-fishing settlement of about 500 people. Now the excellent natural roadsteads have been converted into an efficient port with huge cranes and repair yards, where work continues as usual even during the long Arctic night when temperatures of 62 deg. of frost are common.

Accounts brought home by British Navy and mercantile crews give a vivid picture of the difficulties of this high Arctic route, where Russian energy and determination ashore are matched by the tenacity of our seamen who deliver the goods.

Here is one skipper's story. "Before we got to the static ice, we met some heavy pack-ice. The temperature was 27 deg. below and the pack-ice started freezing solid again, so we all lined up behind the ice-breaker—a fine modern 12,000-tonner which carried a seaplane. The channels often froze up again before the last ships got through, but even then the ice-breaker would not stop. She led the rest of the convoy to a clear patch, perhaps 10 miles away, before returning to rescue the stragglers. Then she would find the leading ships frozen up again, and so it went on."

The Russian ice-breakers are a unique class of vessel. Naturally tremendously strong, some of them have three different sets of engines, with propellers at the bows as well as the stern, and a crew of 250 men. When they meet solid ice, these ships steam full speed at it; the impetus of the collision carries the breaker's bows high and dry up on the ice often for a considerable part of her length. Under the strain of so great a weight, the ice must yield even if it is 9 or 10 ft. thick. Quite often the ice-pilots are young Soviet women lieutenants.

THE NAZIS ATTACK A RUSSIA-BOUND CONVOY: This is a scene during an attack by German planes on an Allied A.-A. vessel (on left) in a convoy carrying Lease-Lend supplies to Russia. The large aircraft is a British plane, which is attempting to chase off the Nazi attackers: three of the latter can be observed between the ship at the right and that in the centre. The British plane downed one German for certain and scored a probable victory over another. This action took place within the Arctic Circle several hundred miles off the North European coast

HEAVY GUNS, BUILT IN CANADA, being loaded aboard a vessel at a Canadian Atlantic port ready to be convoyed to Britain and to Russia. The guns are protected by specially-designed crates

Besides the main harbours at Murmansk, dispersal quays have been developed on other inlets in the neighbourhood. To reach these, the ships have to be towed individually by the ice-breakers, which use 8-in. steel hawsers. Even these often break. The ice in these channels freezes again immediately a ship has passed, and the frozen surface forms the village high street, with pedestrians, fishermen tending their nets through holes in the ice and horse-sleighs playing "last across" with the shipping, like London street urchins. On one occasion the log of a British corvette contained an entry, "Collided with Russian soldiers who cut across our bows—query, does steam give way to Shanks's pony?" Visits between ships were made not by boat, but on foot, with boat-hooks as alpenstocks. In such conditions, it took one British merchantman seven hours to travel the last mile or so to her berth at the head of an inlet. "There was no need to use a single mooring-rope," said the skipper; "we just froze solid alongside the timber jetty. When we had discharged cargo, the ship was naturally lighter. In the middle of the night she managed to break free from the ice and bob up to her new waterline with a noise like thunder. The ice-belt round the hull at the old load-line was 4 ft. thick."

"Work never stopped ashore," said this skipper, and the Russian sentries were present to examine the crew's passes every hour of the 24, even in 60 deg. of frost. Ashore the workers lived in long log-houses with a central corridor, and arranged with one stove between each two rooms.

While the Russian ships are naturally built specially for the jobs and the men accustomed to the climate, the same does not apply to our vessels or crews, who deserve the greatest credit for their fine performance. Many of our corvettes have spent long periods in these waters where the cold was so intense that it was impossible to take a mug of cocoa from the galley to the men on deck without its freezing. They have crashed through ice so thick that the watch below mistook the noise for gunfire and came running on deck. Under such conditions have they delivered thousands of planes and tanks through Russia's only window to the world.

M. J. Massey

BRINGING FIGHTING MEN BACK TO HEALTH

AN R.A.F. DOCTOR HELPS ONE OF HIS PATIENTS WITH A BROKEN LEG on to a plane during a rehabilitation course, to give him the feel of an aircraft again whilst his injured limb is mending

A Flight-Sergeant (from Welling, Kent) with both his legs fractured, and a Sergeant (from London) with a leg injury, watch a Flight-Sergeant D.F.M. who is getting the feel of a cockpit again with the help of an R.A.F. instructor

Voluntary women helpers at the Convalescent Depot help the patients to waltz, to strengthen their backs and legs after injuries received during operational flying with the R.A.F. This is one of the "new ideas" for the rehabilitation of wounded men after they have left hospital

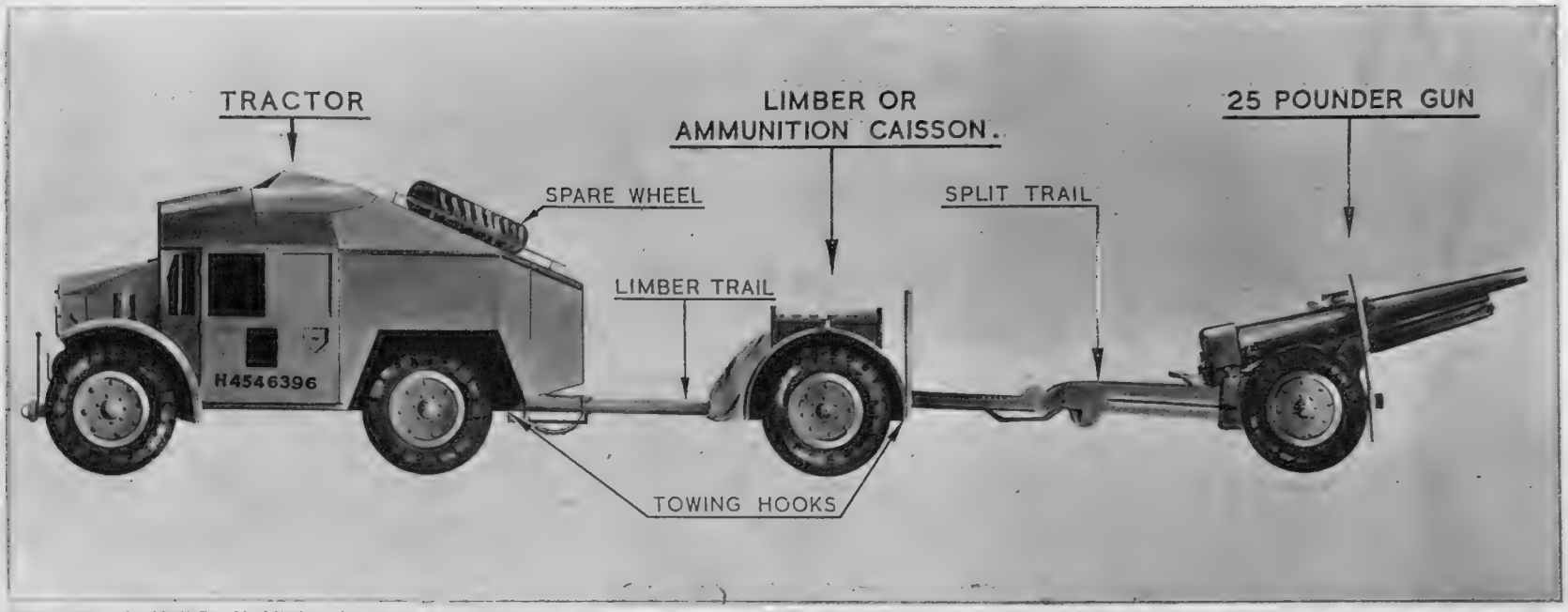
One of the "new ideas" of this war is the Rehabilitation Course for wounded men after hospital treatment: the R.A.F. men seen in the three pictures above are thus being "rehabilitated." As soon as is fitting, the patient is allowed to leave his bed, and then becomes the subject of a carefully worked-out scientific plan to get him, little by little, back to normal by action and movement. Remedial exercises have taken the place of long cures in bed: early movements of any muscle of the body after injury, say the medical experts, prevent atrophy and help to rebuild tissues. Therefore, air crews grounded as the result of crashes or enemy action are being helped by R.A.F. experts to keep their hands in until they are fit again for normal duties.

These pictures were taken at an airmen's Convalescent Depot of Technical Training Command: at this depot, young pilots, wireless operators, navigators, bomb-aimers and air-gunners go through routine courses of games, exercises and massage. Grounded pilots take a short daily refresher course for night-flying: wireless operators, bomb-aimers and the other members of a bomber's crew pay constant visits to the "grounded" bomber cockpit and fuselage.

Their visits help, too, to keep the mind active. This is a most important side of the work of the Rehabilitation centre. It is vital to keep the mind as healthy as the body: hence the Depot's motto, "*Mens Membra Medicate*" (The mind heals the body). In addition to the other exercises for the patients, girls living near the Depot come in daily to give the airmen dancing practice. This performs the double function of amusing them and curing them at the same time. Even when their legs are still in plaster, the patients enjoy this part of the treatment!

Below—THE ARMY HAVE ADOPTED SIMILAR REHABILITATION METHODS: A patient, whose arm and shoulder had to be coaxed back to normal, works on a loom as part of the new methods of treatment. In the intricacy of their work, the patients often forget their injuries

Wounded members of the Forces are getting well again by new methods of treatment. Instead of an ordinary hospital, more cheerful colonies of small buildings are provided for them where invalidism is ruled out from the start. Rehabilitation specialists put the patients through special exercises. Some of the patients do these while lying down, others while sitting or standing up. These exercises prevent muscular atrophy or shrinkage. To keep up the interest and enthusiasm of the patient whose physical re-education is the object of the treatment, men are often given specially chosen work to do



HOW THE 25-POUNDER IS LINKED UP FOR ROAD TRAVEL: The gun is hooked on to its limber; the limber is hooked on to the tractor (known as a "quad"); and all three sections thus travel together. The crew of five travel with the gun, so that each forms a self-contained artillery unit. If 250 guns are concentrated at any given point, there will thus be 250 trucks—each with driver, crew of five, ammunition, food, petrol, etc.—*Drawing by B. C. Wood*

Guns of the British Army

The 25-pdr. "TANK BUSTER"

"The Best Gun of its Kind in Any Army"

IN factories all over Britain, workers who were formerly motor-car salesmen, shop assistants, laundry girls—everything but professional engineers—are now producing, at the rate of hundreds a week, a weapon which has proved itself the answer to the Panzer, and the best all-round field-gun of its kind in the world—the British 25-pounder field-howitzer.

Weighing about a ton and three-quarters, costing nearly £3,000, it has an extreme range of close on 8 miles. It is made with such precision that its own crew can virtually rebuild the gun, replacing worn or damaged parts with new, in the dark, in the desert, anywhere, with only the tools each team carries with them.

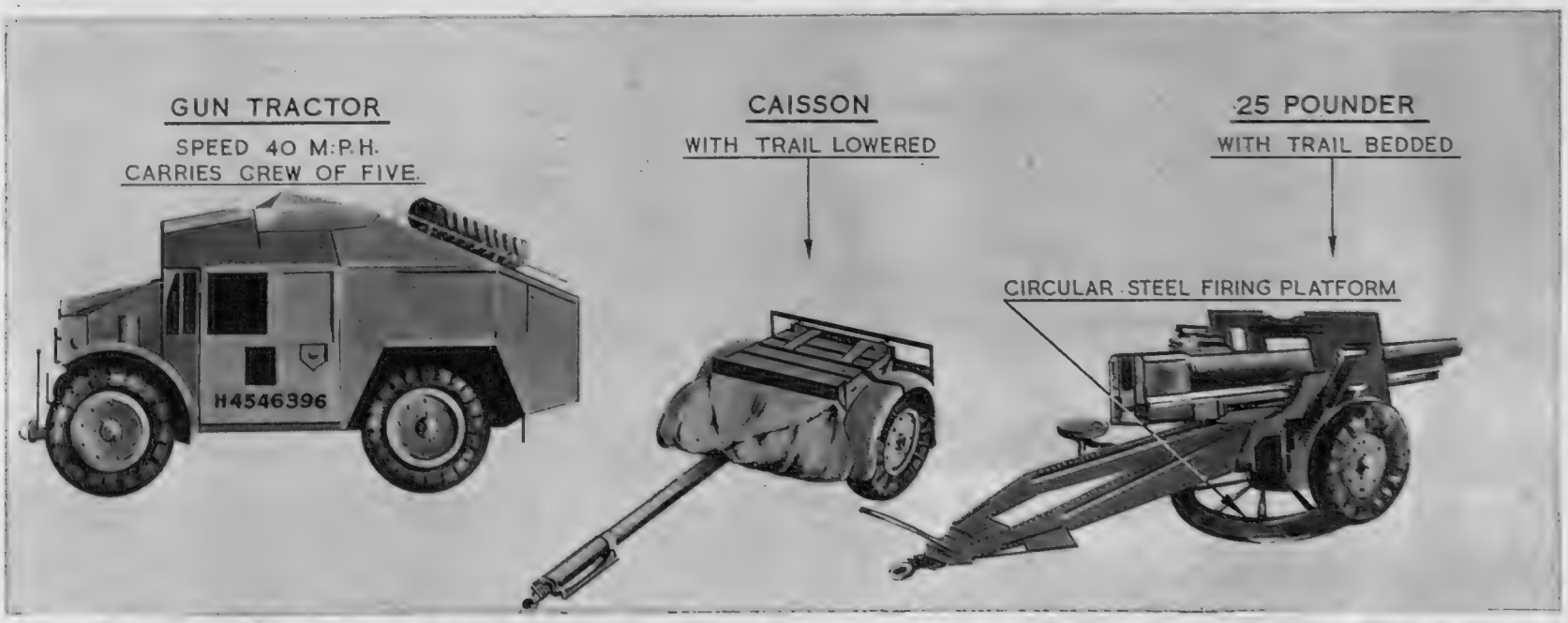
The complete outfit really consists of three units: the gun-tractor, which is a very short-wheel-base lorry with a high ground clearance; the limber; and the gun. The tractor is a totally enclosed vehicle, known to the army as a "quad." To the uninitiated it looks extremely ungainly, and is apparently alike at front and back. It can not only negotiate rough ground very nearly as well as a tank, but it can tow the outfit at speed on good roads. Hitched to a towing-hook at the rear of the "quad" is the gun-limber; and hitched to this, in turn, is the gun itself, which is always towed tail first. One advantage of this arrangement is that the gun can go into action in a matter of only a few seconds after the "quad" has halted. It is little more than a matter of knocking open the two quick-release hooks on the towing gear, and the gun itself can be fired on its wheels as soon as it is brought to bear.

Mounted on the limber will usually be seen the camouflage nets, and the circular steel firing platform. Although the 25-pounder's trail gives it a very wide arc of fire, much more than the old 18-pounder, it is still often not wide enough for modern war. The stock method of German tanks, when attacking a gun position, is to make attacks from the flank, or even the absolute rear. By mounting the gun on a steel table, one man can quite easily slew it round on its own pivot, and the gun has an arc of fire absolutely all round the compass. The rubber tyres, by the way, have treads 9 in. wide, are inflated to 35 lb. per sq. in., and are specially made so as to be virtually unburstable.

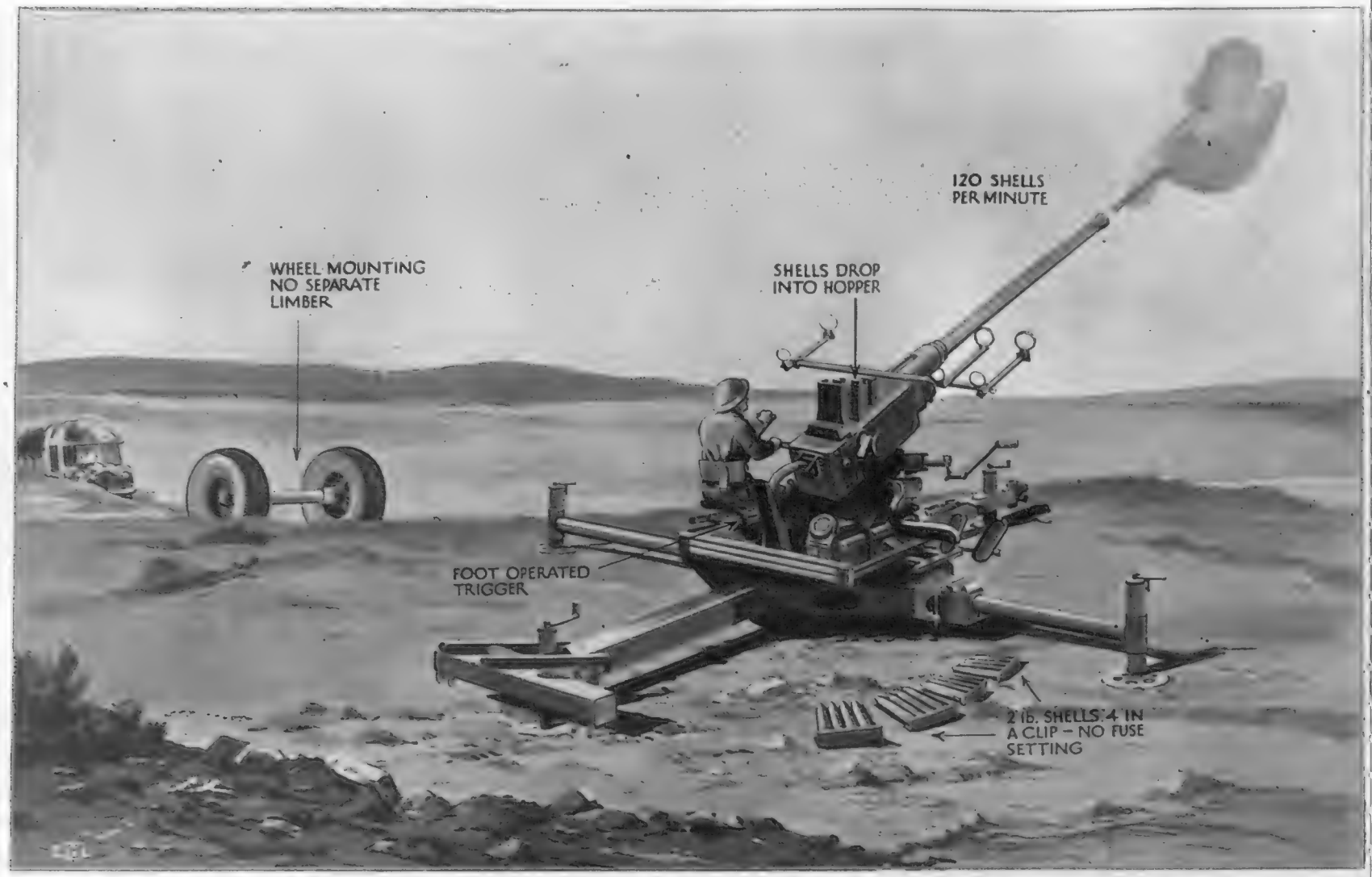
Here are a few other facts about this valuable weapon. Although the normal crew is five men, the gun can be, and often has been, worked by one man if need be. It has a range of elevation of from 5 deg. above the horizontal to 45 deg. It has shelled tanks at 40 yards range, and enemy positions eight miles away equally effectively. The barrel is about 7 ft. long from breech to muzzle, and, on firing, it may recoil as much as 40 in. The "recuperator," or shock-absorber, on which the barrel is operated, contains a three-cylinder, oil-damped, compressed-air device, and at the end of the recoil the pressures in the recuperator may rise to 2,000 lb. per sq. in. The rather thin-looking shield which protects the gun-crew is actually a piece of very high-quality armour-plate, which has withstood penetration when fired on at ranges as close as 200 yards.

This is the gun which the men and women of Britain are building for service all over the world. It is the main weapon which has shattered Rommel's hopes of victory in the desert.

AN ACTUAL PHOTOGRAPH OF THE 25-POUNDER BEING READIED FOR ACTION: The steel tube on the left is *not* the gun barrel, but the limber trail, by means of which the caisson is towed behind the "quad." The gun is seen behind; it has been placed on its circular steel firing platform ready to fire in any direction



THE THREE SEPARATE ITEMS OF A 25-POUNDER GUN UNIT. The "quad," or tractor, carries the crew of five in addition to the driver; it has a speed of 40 m.p.h., and can negotiate rough ground almost like a tank. The limber travels with a full load of ammunition, and usually it carries the camouflage nets and the gun's circular steel firing platform. The gun itself is here seen in its firing position, with trail bedded and with the steel firing platform on which the 25-pounder revolves in position—*Drawing by B. C. Wood*



AS A "STUKA-STOPPER," THIS GUN IS WITHOUT EQUAL. It is the Bofors 40-mm. "light" A.-A. gun, and weighs about 2 tons: here it is seen as fixed on the ground for firing. There is no separate limber: the ammunition is fed into a hopper in clips of four. No fuses have to be set for the shells, which explode in the air on contact. If the shell does not touch an aircraft after firing, it is so constructed that it will explode before reaching the ground.—*Drawing by E. G. Lambert*

Guns of the British Army

The ARMY'S ANSWER to the STUKA

The Bofors Anti-Aircraft Gun, with which the Eighth Army Hit Back at the "Luftwaffe"

Over the whole of the Mediterranean battlefront, the Axis have up to now lost nearly 6,000 machines. Each week sees between thirty and fifty more products of the Messerschmitt, Junkers, Heinkel and Caproni factories coming to earth with a bang for the last time. Unquestionably, the greater part of the Axis casualties must be credited to the R.A.F. If one contrasts the part played by Rommel's air force in his last 1942 advance—in blasting us out of Tobruk, for example—with the general atrophy of his air arm this year, it is quite clear that superiority in the air has changed hands.

Even so, the Eighth Army is by now well capable of doing its share in clipping the wings of the *Luftwaffe*. Even the R.A.F. cannot be everywhere at once. There must necessarily be scores of cases in which enemy planes try their luck in hit-and-run raids in the desert, just as they do on our South Coast. In such cases the soldier has to look out for himself and use the weapons he has been given with a straight eye and a cool head. The results leave no doubt that the men of the Eighth Army have "got their eye in." Undoubtedly the most useful gun for A.-A. work right up in the forward battle area is the Bofors 40-mm., and photographs will have made most people familiar with this rather spidery-looking, slender-barrelled gun. It can pump 2-lb. shells to a height of 6,000 ft. at the rate of 120 a minute. The shells are fed into a hopper on top of the breech and explode in the air on contact, so there is no delay in fuse-setting. The Bofors actually has a foot-operated trigger, worked by one of the two gun-layers. As a "Stuka-stopper," it is without equal.

***Above*—A Bofors A.-A. gun actually on the field of battle in Tunisia. *On left*—How the gun is erected on the ground, and the positions of the crew when in action**

Officially, the Bofors is rated as a "light" A.-A. gun. It does seem quite a dainty structure, and its neat rubber-tyred mounting makes it extremely mobile. But, even so, it tips the scale at about 2 tons, which is quite enough to man-handle in action. The trick in stopping the dive-bomber lies in part in cunning siting of the guns, but mainly in sitting tight and not firing too soon. Both are now second nature with the Eighth Army, and though dive-bombers may dive, few of them ever climb again. The Bofors is about the largest A.-A. gun which functions independently as a weapon, without the complicated predictors and height-finders of the bigger guns. The Bofors gunner aims to hit, not to put up a barrage. There is a big jump both in weight of gun and weight of shell between the Bofors and the next heavier A.-A. guns—the 3-in., 3·7's and 4·5's. The 3-in., for example, fires a 16-lb. shell to a 25,000-ft. ceiling, but both it and its two larger brothers are not really front-line guns. They are to be found more towards the rear, where there are bases, dumps and transport facilities which may tempt the enemy into high-level bombing.

The infantryman's personal A.-A. weapons are the still lighter automatic weapons, the two Besa's (·312-in. and ·591-in.), the Bren and other rifle-calibre machine-guns, still including the familiar Lewis and Vickers. Even a volley from men armed with nothing more than their own rifles has been credited with a "Category 1" before to-day. (A "Category 1" is a plane certainly destroyed; "Category 2" is a "probable," and the third category merely damaged.) P. H.

THE NEW AMERICAN "TANK-BUSTER" GUN: The 105-mm. howitzer, known to the British Army as the Priest gun, mounted on a General Grant tank.

INTO ACTION: The "tank-busting" gun fires a shell. With all its crew aboard, the Grant can move swiftly over the ground on its caterpillar tracks

THE PRIEST GUN.—In a recent issue of this journal, we published the first pictures to be released of the new Priest gun, as fitted to a General Grant chassis for warfare in Libya. The pictures reproduced on this page show how the same chassis and the same gun are also used by the U.S. Army for similar purposes. These pictures were taken during a recent demonstration by American soldiers in Britain. The gun is of 105-mm. calibre, and is ideal for "tank-busting"—as was, indeed, demonstrated against Rommel in Libya and Tripolitania. In addition to this formidable weapon, however, the General Grant chassis also carries a 50-calibre machine-gun, one Tommy-gun, and a Browning auto-rifle. Each of the seven members of the crew is also equipped with a rifle

COMMANDER AND MACHINE-GUNNER IN POSITION: This picture also indicates the position in which the big shells for the Priest gun are carried

A CLOSE-UP IMPRESSION OF THE BIG 105-MM GUN, which shows its great size and solidity. Above and behind it is the 50-calibre machine-gun carried in a turret on the tank's starboard side. Each of the crew of seven is also equipped with a rifle

THE 40-MM. BOFORS GUN AS ARRANGED ON A RUBBER-TYRED CARRIER BASE FOR TRAVELLING. It is clipped to its truck by a steel trail. The gun crew consists of six men who are all carried in the towing truck. This weapon is the largest anti-aircraft gun to function independently without the complicated predictors and height-finders of the bigger guns. The Bofors aims to hit, not to put up a barrage. It can reach up to a height of 6,000 ft.—*Drawing by E. G. Lambert*

HOW THE 3-IN. MORTAR OF THE BRITISH ARMY IS FIXED FOR ACTION. The type of bomb it throws is also shown, complete with its directional fins. The bomb weighs 10 lb. and the mortar has a range of 1,600 yards: twenty rounds can be fired per minute

Guns of the British Army

The DEVELOPMENT of the MORTAR

Which is Now Being Largely Used by the Infantry in Many Theatres of War

"IT was a most accurate weapon—it could land a shell on a dime—and it speedily put the fort out of action," remarked General Eisenhower of the American infantry mortar as used in the operations at Oran; and one more tribute was paid to a piece of ordnance that has played a leading, albeit an inconspicuous part in every campaign of this war.

First in German hands across France the mortar revealed its modern power. It next came into prominence during the Far Eastern campaigns. Then this oldest instrument of missile warfare became notable in the Stalingrad street-fighting. Both attackers and defenders employed the mortar to project, in narrow spaces and from awkward positions, neat but terribly destructive bombs on to obstinate points of resistance. An outstanding use for the mortar was contemporaneously developed in Russia and Egypt whereby tanks could employ the weapon for the purpose of dropping shells at close quarters on defiant infantry in slit trenches. Then the Americans brought it into the ancient, orthodox picture again during those first North African operations, quickly reducing small French fortresses by lobbing shells at a high rate over the battlements into the tight-packed defending parties.

Our own regulation infantry mortar with which we entered this war—and which is operated by a detachment of five men—has a diameter of 3 ins., and resembles nothing more than a long steel tube pointing upwards on a tripod. Carried on the move in a 15-cwt. truck or an armoured carrier or on a mule, it is actually fired by three men of the detachment, who crouch on one knee about the weapon. The ammunition is heavy, each shell-shaped bomb weighing 10 lb., and is brought from the vehicle to the mortar in three-round containers. With an effective range of 1,600 yards, traversing 36 degrees and elevating between 45 and 80 degrees, the weapon can maintain rapid fire at 20 rounds a minute, but usually achieves little more than eight rounds a minute. Such a statistical description may sound impressive, but not by comparison with that of the standard German mortar. This 3·16-in. piece fires two types of H.E. shell, 8·8 lb. and 14·3 lb., a distance of 2,500 or 4,500 yards at the rate of 20 to 25 rounds a minute. It has lately served the Germans well in Tunisia, and the enemy's tactical use of the weapon has been superior to ours. The American, Japanese, and probably the latest British mortars have, however, a similar performance, and should be used in the same way, obtaining their range in the first place by using a single mortar. This "creeps" with shells towards the target till a "bracket" has been obtained, when all the pieces are brought to bear.

The mortar was sufficiently important in the trench-fighting of the last war as a means of delivering heavy blows at close quarters, but has become even more valuable in modern infantry tactics. It has been revealed in many recent battles how infantry armed with this weapon have won a new status for themselves.

A trench mortar being operated by U.S. Rangers during Combined Operations training in this country

THE BRITISH 3-IN. MORTAR being fired by a French soldier in North Africa. This is a type of weapon developed during the last war, which has proved itself during this one

	British Standard Mortar	*German*
Weight of weapon	125 lb.	187 lb.
Diameter of bomb	3 ins.	3·16 ins.
Weight of bomb	10 lb.	8·8 lb. and 14·3 lb.
Range	1,600 yds.	4,500 yds. and 2,500 yds.
Fire rate	20 rnds. per min.	20 to 25 rnds. per min.

A GERMAN MORTAR GUN AND SHELLS captured from an enemy patrol during the fighting around Medjez-el-Bab: The weight of this weapon is 187 lb.; it throws a bomb of 3·16-in. diameter, which weighs either 8·8 lb. or 14·3 lb., a distance of 4,500 or 2,500 yards. It is capable of firing 20 to 25 rounds per minute

HOW THE MORTAR IS SITED DURING AN ACTUAL ENGAGEMENT: A picture taken in action in North Africa, where mortars have been used greatly of late

A "PITCHED BATTLE" in ENGLAND

During the Largest Offensive Exercises Yet Carried Out by the Home Forces

GENERAL SIR BERNARD PAGET (C.-in-C. Home Forces—second from right), with General Andrews (in command of the U.S. Troops in Europe—in centre), and the King of Greece (on left) listening to details of progress from a General in the field

THE BRITISH COMMANDER views the gigantic Exercise from his own aircraft during the "battle"

ARMY AND AIR WORKED AS ONE IN THIS GREAT MANŒUVRE. Here officers of the two Services are examining photographs of "enemy" concentrations in the field

AIR COMMODORE A. S. G. LEE, Senior Air Staff Officer of one of the R.A.F. Composite Groups, listens to the interrogation of pilots just returned from a shoot-up of ground targets

A TANK COMMANDER AND DRIVER checking up on the route prior to moving off to take part in the "battle." Their big Churchill tank has been well camouflaged from aerial observation

EVEN PASSENGERS ON BUSES HAD THEIR IDENTITY CARDS CHECKED by "Southland" troops—a task carried out by a Canadian soldier armed with an automatic weapon

The biggest offensive operation ever undertaken in Britain has just been completed. During the course of this, the "Southland" army, composed of Canadian and British troops, operated against the "Eastland" Army, which represented the Germans. The battlefield was the English countryside: civilians were questioned, their identities checked, and all the background Security measures were brought into operation. General Sir Bernard Paget, Commander-in-Chief of the Home Forces, directed the operations, visiting units on both sides and viewing the Exercise from the air. With him were the King of Greece, Sir James Grigg (the Secretary for War), and General Andrews (Commanding the U.S. troops in the European Theatre of War). The Duke of Gloucester also visited the battlefield

The BLACK BERET—

The First of Two Articles Dealing with the Work of the Royal Armoured Corps. By CHARLES GRAVES

THE task of mechanising the Cavalry and Yeomanry fell to the lot of Mr. Leslie Hore-Belisha, as Secretary of State for War, in April 1939. The Royal Tank Corps had been formed towards the end of the last war, but the initiative in tank fighting had been allowed to go by default. So much so that in the early 1930's the Royal Tank Corps had been reduced to six battalions and seven or eight Armoured Car Companies, and the requisite depot.

The decision taken by the War Office to mechanise the Cavalry and Yeomanry was by no means popular. Some regiments were more loth than others to give up their spurs in favour of accelerators, and short, sharp words occurred between Commanding Officers of certain cavalry regiments and the War Office. The real diehards among the Horse Cavalry were the Scots Greys, the Royals and the 1st Life Guards, none of whom was mechanised until after the outbreak of war.

But of what does the Royal Armoured Corps consist? The answer is that there are (a) a number of Tank Battalions of the Royal Tank Regiment (which took this name in place of Royal Tank Corps in 1939); and (b) a number of mechanised Infantry battalions.

These regiments employ heavy infantry tanks such as Churchills, Valentines and Matildas.

During the retreat to El Alamein there were suggestions in the House of Commons that a reason for the German superiority in the desert was that the German tanks were air-conditioned. The theory was refuted. The truth of the matter was that the Germans had more experience in this kind of naval warfare on land as the result of the European campaign ending in the evacuation of Dunkirk. It was during this phase that the 12th Lancers, under Colonel Lumsden (as he then was), proved that even without experience in this form of fighting, they were the masters of their German equivalent. Colonel Lumsden has since risen to dizzy heights, and British Tank Commanders have learnt in the hard school of actual warfare all the tricks of the trade.

The Germans, with a fine disregard for convention, had discarded the idea that coding messages between tanks was necessary, their theory being that, in the heat of the battle, speed is the essence of success, and that by the time the opposition had translated the German messages between tanks, the situation would have altered sufficiently to nullify the value of the knowledge of the tactics and instructions. Short-wave transmission between tanks often produces curious phenomena. During July 1941, for example, the Royal Navy, in its attempts to pick up conversations between E-boats in the North Sea, frequently found that conversations between German tank crews in the Steppes were completely filling the air. There was nothing they could do about it, because by the time that they informed the Russian Embassy in London, the battle might well be removed 50 miles.

The need for fitness in the Royal Armoured Corps needs no stressing. It is scarcely necessary to point out that tank crews can find themselves in Libya under conditions of such extreme heat that life is almost intolerable. Equally, in Russia the cold can be so intense that if they touch a piece of metal with their fingers, they will lose the skin.

In the Royal Air Force, when a bomber has returned from a sortie, the ground crew take over and the bomber crew retire to their well-deserved meal and rest. In the Royal Armoured Corps the tank soldier, having come out of the battle, which may have lasted several days, has to replenish fuel and ammunition, carry out necessary repairs and maintenance both to the guns and to the tank itself, and mount guard If not in contact with the enemy he has to cover his tank with tarpaulins. In any event, he must camouflage his track marks and vehicle before being able to have a meal. Even then it is probable that it may be impossible for him to light a fire, in view of possible enemy air reconnaissance.

For that reason, every tank soldier has to understand fieldcraft, protection of sentries and unarmed combat, in addition to the various infantry weapons and, of course, the various types of armament on his tank. It used to be thought that a tank soldier's maximum endurance was seventy-two consecutive hours in his tank. In the Libyan campaign there have been occasions when tank crews have been in constant action for thirty days on end.

Team work, endurance and dash are equally essential to successful tank fighting; and the difference between the Stuart and the Churchill (or, still more, the German Mark VI.) is much the same as that between destroyers, cruisers and battleships. As in naval warfare, the faster units have to rely on their speed for survival. There is, of course, always the chance that they can lure their more heavily-armed opponents into some kind of tank trap, probably a concealed battery of field guns. It is the co-ordination between the field artillery, the tanks and the low-flying aircraft used in Army co-operation on which the success of the campaigns of 1943 will largely depend. And when one looks back to May 1940, when in the whole of Great Britain there were only forty-six obsolete tanks used for training purposes, it is certainly miraculous that the Royal Armoured Corps should comprise to-day such an immensely formidable force.

Few people realise that we lost no fewer than 750 tanks during the operations leading up to the evacuation of Dunkirk (I have this figure from Mr. Leslie Hore-Belisha himself). And many have forgotten that the Commanding Officer of the Scots Greys actually circulated every Member of the House of Commons in an effort to prevent his regiment being mechanised. It was, of course, strictly against King's Regulations for a serving officer to act in this way, but it nearly caused a Government crisis. Those were the days when a substantial proportion of officers in Yeomanry regiments promptly resigned their commissions when they were informed that they were to be mechanised. They said that they had joined the Yeomanry because of their love of the horse, and that they had no intention of becoming garage hands—or words to that effect. Again, according to Mr. Hore-Belisha, the percentage of these resignations amounted in some regiments to as much as 50 per cent. Times have certainly changed since then!

(The second, and concluding, article on "The Black Beret" will be published in next week's issue)

TANK MEN OF THE FIRST ARMY JUST OUT OF THE BATTLE LINE IN TUNISIA. The tank is a Crusader, its big gun is a 6-pounder. The crew have just received their mail from home—letters, papers and parcels. Built on to the starboard side of the fighting vehicle is the bivouac tent which will serve as a home for the crew until, once again, they are called upon to go into the thick of the fighting

The fact that goods made of raw materials in short supply owing to war conditions are advertised in this publication should not be taken as an indication that they are necessarily available for export

The WOMEN of BRITAIN at WORK

BOMBED CHILDREN FROM LEWISHAM RECUPERATE IN COUNTRY MANSIONS : Some of the girls at Graycombe House helping to move a chicken run

LEWISHAM GIRLS MAKING THEIR OWN BEDS in one of the dormitories at Graycombe : The children of Lewisham, bombed in their school during a German daylight attack, are spending a recuperative holiday in four Red Cross and St. John Convalescent Homes in the country. That at Graycombe House, the residence of Mr. Francis Brett Young, the novelist, is in a lovely part of rural Worcestershire. It is a delightful period house with Adams decorations

GIRLS WHO ARE BUILDING COMMANDO BARGES IN A BRITISH SHIPYARD : Women workers filing the edges of the portholes of one of the Tank Landing Craft under construction in Scotland

BETTY DUNNETT, aged twenty, and MARY KNOX, aged twenty-seven (on right), study the blue prints in the shipyard : Large numbers of women between the ages of twenty and thirty are now being sent to work in the shipyards instead of being drafted into the Forces. There are also many older women already doing various jobs in the yards. Among the work now being carried out by them are electric welding, working oxygen-cutting machines and operating drills, carpentry, french polishing, painting, etc. These two pictures were taken in a shipbuilding yard in Scotland, where women are now busy on Tank Landing Craft. In this yard there are 36 per cent. male, and 64 per cent. female, workers

THE NEW GOOD CONDUCT BADGE OF THE W.R.N.S. which has just been issued : This is a chevron, in "Wren" blue, which is worn on the left arm. It carries with it an increase of pay of twopence a day (two-thirds of the threepence a day paid to the men) and corresponds to the red good-conduct stripe worn by naval ratings : it is earned in the same way. The wearers are the Wren veterans of this war who have served consistently well for a period of not less than three years. In order to gain and retain the stripe, a high standard of conduct is required and must be maintained as the distinction can be withdrawn should conduct fall below the requisite standard. The badge is issued on a white ground for wear with tropical kit and on blue for serge uniforms. As an encouragement to the paragons in the W.R.N.S. a second stripe may be earned after eight years of continuous good conduct, and yet a third after thirteen !

AN ELVER FISHER ON THE BANKS OF THE RIVER SEVERN : Miss Irene Jelf, of the village of Ashleworth, repairing her curious scoop net : The annual shoals of elvers are now arriving in the River Severn, where a rich harvest is being reaped. Every night the banks of the river are busy with elver fishers. Before the war, large quantities were exported to Germany

The World of Books—By Vernon Fane

THE WAR HAS NO PLACE IN THIS WEEK'S SELECTION

Regency Odds and Ends ; The Parson's Wife through the Ages ; H. E. Bates' Multum in Parvo ; Miss Eiluned Lewis's Romantic Story of the Sea

WITH the possible exception of the everlasting Victorians, there is no period in English history so well documented as the Regency. The artificial elegances of the eighteenth century had already begun to be tarnished on the dust-heap of history ; the French Revolution had happened ; the masses were stirring and men and events had begun to take on shapes which, of necessity, were casting their shadows before them.

True to the period type, the Prince Regent was displaying qualities hitherto unobserved in the Hanoverian dynasty. In literature and the arts, a new spirit was stirring. Men and women who were destined to leave their mark on the century were coming to maturity.

Miss Dorothy Margaret Stuart has, from the highways and byways of this decade, collected a mass of odds and ends which she puts together in REGENCY ROUNDABOUT (Macmillan. 12s. 6d.). With the exception of the First Gentleman and a few inevitable references to people like Fox, Sheridan, Horace Walpole and the like, her material is the stuff of everyday life as it was lived in those days.

The minor poet, for instance, was an irrepressible figure in the contemporary scene ; among them William Thomas Fitzgerald and Lamb's queer friend, George Dyer. Through these pages we get a glimpse of the beginnings of seaside resorts like Ramsgate and Brighton, a reference to the "semi-marine village or hamlet" of Southend and an amusing sidelight on Weymouth, with George III cracking lewd jokes in a bathing-machine. Behind the footlights Mrs. Siddons was braving the necessities of retirement in the face of the challenge of new stars. It was an age of funeral pomp ; of frightening manifestations of medical science ; of the beginning of the rise of the commercial gentleman ; and of quite a shocking degree of infantile mortality.

Miss Stuart's pages are the weft and warp of the stuff of ordinary and extraordinary people of those times. Her pages are throughout enlivened by quick touches of observation and deliciously pointed with wit.

THE HISTORY OF THE PARSON'S WIFE, by Margaret Watt (Faber and Faber. 8s. 6d.), is inextricably bound up with no less a subject than the rise of the British Empire. In the Reformation which changed the balance of power, not only in Europe, but in the world, was started more than one emancipatory movement. The Church of England, whatever line it was to take in future centuries over such matters as the Deceased Wife's Sister Bill, led the field with Luther in the matter of the celibacy of the clergy.

As a matter of expediency, Henry VIII might be said to have compromised on the marriage of priests in order to extricate himself from his own matrimonial difficulties. His daughter Mary, with fire, sword and torture, attempted to stamp out what her sister Elizabeth had reluctantly to agree to reinstall when she ascended the throne. It may have been true that Mrs. Cranmer had to live in such retirement that she travelled in a box with ventilation holes in the lid, but it was also true that Mrs. Parker was very much present when Queen Elizabeth visited Lambeth. Elizabeth's attitude may be summed up in her famous insult, "Madam, I may not call you—Mistress, I will not call you—but yet I thank you."

Miss Margaret Watt traces the evolution of the parson's wife from the insecurities of the sixteenth century to the establishment in the succeeding centuries of the country parsonage, with its indubitable influence on the development of English life. So strongly does it grow that we find from Jane Austen onwards an increasing volume of literature based upon the parsonage. This reached its crescendo with the publication of *Robert Elsmere*, and its apotheosis in the Barchester novels of Anthony Trollope, with the formidable figure of Mrs. Proudie dominating them.

In her interesting chapter, "The Parson's Wife in Fiction," Miss Watt notes the decline of this influence at the beginning of the century. Fifteen years separated *Robert Elsmere* from *Red Pottage*, and with the exception of George Bernard Shaw's *Candida*, fiction did not concern itself much with the domesticities of the clergy at the end of Victoria's reign and in the years before the first Great War. She was left high and dry in rectories and vicarages till after the war, when Sir Hugh Walpole published his novel *The Cathedral*. Shining like a beacon of pure literature in that otherwise arid period is, surely, *The Pastor's Wife*, by "Elizabeth" of German garden fame, who was the wittiest and most exquisite of all writers who ever penetrated a parsonage.

Miss Watt rounds off her history with some interesting and illuminating chapters on the famous females who, a generation or two ago, were such powers in metropolitan and other sees. There are also some valuable chapters on the wives of those ministers of the Scottish Church who have trodden so nobly in the steps of the two fragile wives of the thundering John Knox. Over the border there are metaphysical as well as spiritual (and biological) urges, but it was a famous Scotsman who said, "Marriage is a friendship recognised by the police."

LAYING THE FOUNDATION FOR A FUTURE BUSINESS CAREER? This is the first picture to be published of Master Kenneth Gore's Taxi Service. This enterprise was recently launched in Cardiff by Master Gore, aged nine, who is his own designer, builder, operative and managing director. His economic transport vehicle guarantees punctuality and cheapness for those who wish to travel to social functions, Punch-and-Judy shows, sweetshops—or just round the park. Cost—one halfpenny a drive! Note the luxuriously upholstered interior!

Mr. H. E. Bates has written a miniature novel, about as long as a generously planned short story, in THE BRIDE COMES TO EVENSFORD (Jonathan Cape. 3s. 6d.), and amazingly good, bitter and readable it is. In spite of the short compass—the little book has only sixty pages of pleasantly large type—here is a story of real power that has, without exaggeration, a Flaubertian quality about it.

Ida Cassell came to Evensford as a girl of twenty-three, a pleasant, unremarkable girl whose cool grey eyes had a look of calculation that most people missed. Her employer, the local draper, certainly missed it when he married her for love, and died soon after, leaving her the business that was to be the nucleus of her fortune.

She transformed the shop, enlarging it to more than three times its size. And she began to acquire house property, quietly, almost furtively, and street by street. "She bought mostly shops. After that rows of working-class houses in the poorer parts of the town. She bought and then waited. She waited, and then, on some trivial excuse, put up the rent. She liked that, too. She liked the feeling of power : the deliberate, cool, unpleasant power of imposing herself on a town that did not want her."

Thirty years after her arrival in the town she met a young man in one of the houses to which she would go herself to collect the rent. For the first time in her life she fell in love, but he was first irritated and then repelled by this middle-aged, doting woman, and for some time left the town. When he came back it was to bring a young wife.

That is all the story is about, but there is far more than that in the telling of it ; in the deliberate understatement, in the precise choice of words and in the very definite atmosphere, of which the reader is almost physically aware, of rancour and contempt. All of which may not sound like very enjoyable reading, and yet that is just what this slight book provides, and in such disproportionate measure.

It is difficult to describe the charm of a book like THE CAPTAIN'S WIFE (Macmillan. 7s. 6d.), which is a novel with little form and less plot ; a story of a Welsh village in the late nineteenth century. There are no mines or miners in it, no mention of colliery disasters, no strikes and no graver economic problems than can be put right with a basket of good food at the kitchen door. The village is one which lives by the sea, not a fishing village, but one in which every second or third family has given its men to the sea. The Captain himself is away with his ship for three-quarters of his life, only spending rare leaves with his pretty wife and their four young children in the stone house that they all love.

There are dramatic moments in the story of this family. The Captain's ship burns out, and it was a ship he loved. The youngest child dies, and there is a shipwreck none the less terrible for being in full sight of land. But all these events, in which horror and pity are the keynotes, are treated with the softest of pedals. There is a lack of emphasis here which may irritate some, but my own feeling was one of delight at the smooth, controlled flow of narrative and description, and at the philosophic acceptance of life's mutability.

Miss Eiluned Lewis has her own special kind of romanticism, and a style that is faintly musical at its most uneven. Hers are quiet books ; quiet with a sense of peace, and not with the weight of dullness.

RIDE ON, STRANGER (Gollancz. 10s. 6d.) is really the story of a girl who couldn't keep still, although the scene of the young woman's restlessness being Australia—and contemporary Australia—gives this long, full novel a fresh angle of interest.

Shannon Hicks was a younger daughter of a poor family, and throughout her life she was on her own. From the time that, as a little girl of twelve, she takes an unauthorised jaunt to Sydney, to the day her husband goes off to the war, leaving her with a farm full of stock and a farmhouse full of relatives to manage, Shannon runs her own life, and is the same tough, independent little creature who had fought her own battles since childhood.

Her career, however, although independent, lacks direction. Within a few years Shannon has been secretary to a latter-day "abbot," radio broadcaster, member of a Proletarian Club, of a rather more revolutionary council, manageress of a bookshop and farmer's wife. In all these projects, Shannon has been helped and hindered by the vagaries of love, for she is a personable wench.

Her story is told with humour, compassion and in much detail, but there is a disappointing flatness about it all. Except that she is a Jill of all trades, and the kind of friend who is inevitably burdened with other people's troubles, Shannon has proved little except that no single occupation has satisfied her. In spite of her restless energy, or possibly because of it, Shannon is a woman without a purpose.

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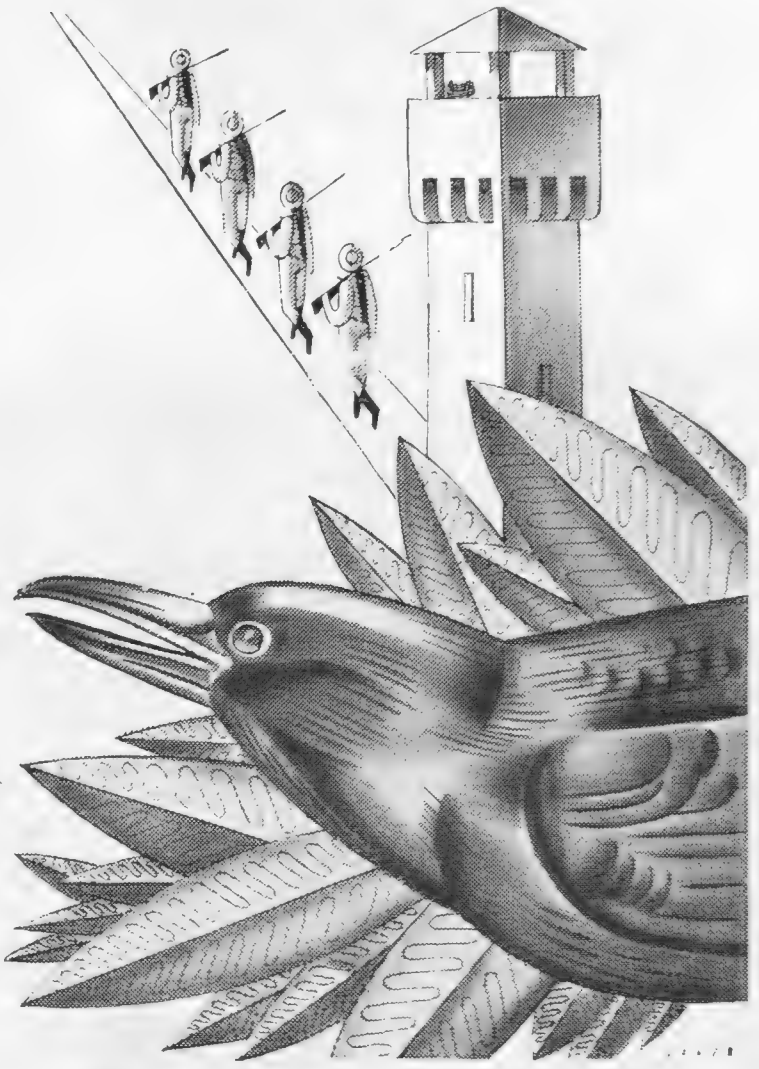

Can a crow count? Here's one that could — up to four. A man was out to shoot this particular bird, but found that when he entered his watch tower to do so, the cunning crow calculated otherwise, and made off. He tried coming first with one, then two, then three other men, all of whom came out of the tower, leaving only himself. Still this calculating bird keeping a close count, evaded the attack. At last the marksman took four men in and repeated the experiment. When the fourth man came out the crow's ready-reckoner mechanism jammed, and he returned to his fate. Mistakes in everyday accounting calculations seldom have such drastic results. Nevertheless to-day's short staffed accounting departments cannot afford to make mistakes. For that reason, and also to step up their figure-work, more and more firms use Sumlock adding-calculators, which cope with so many of their toughest problems. In this and many other ways the Bell Punch Company (makers of Sumlock) are contributing to the National effort.

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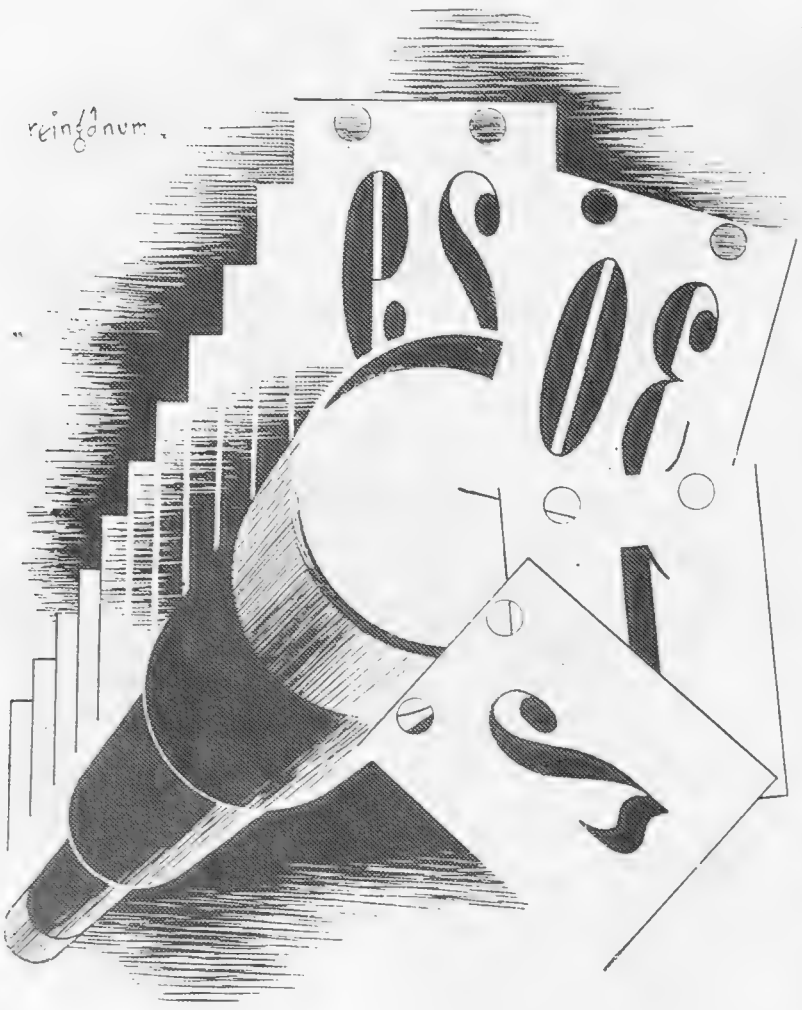

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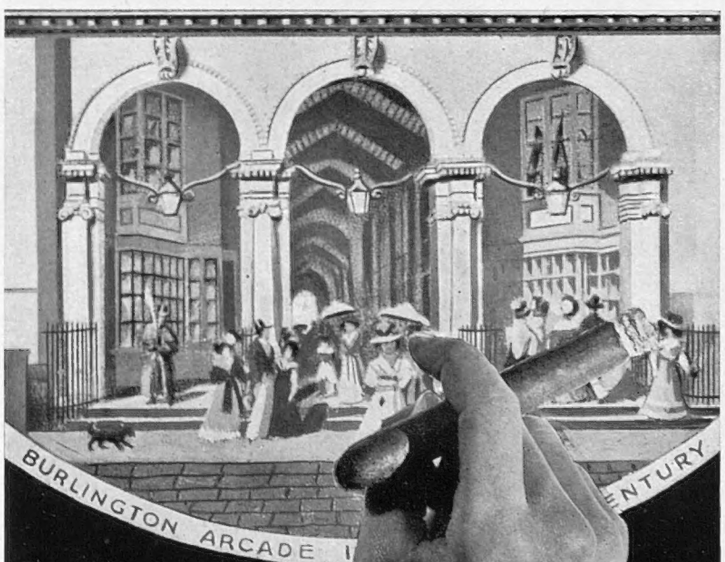

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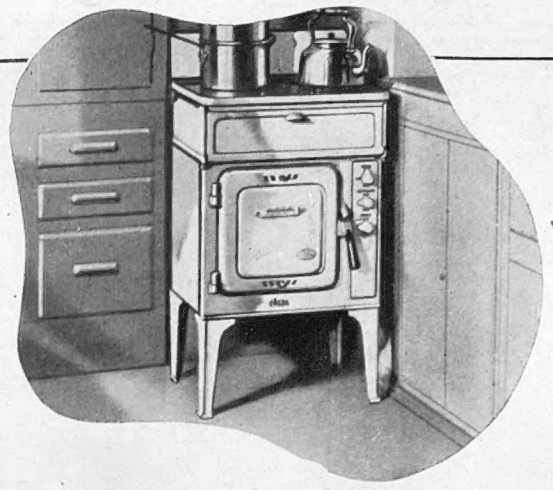

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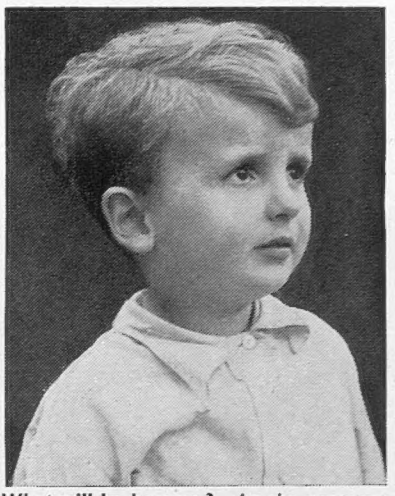

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